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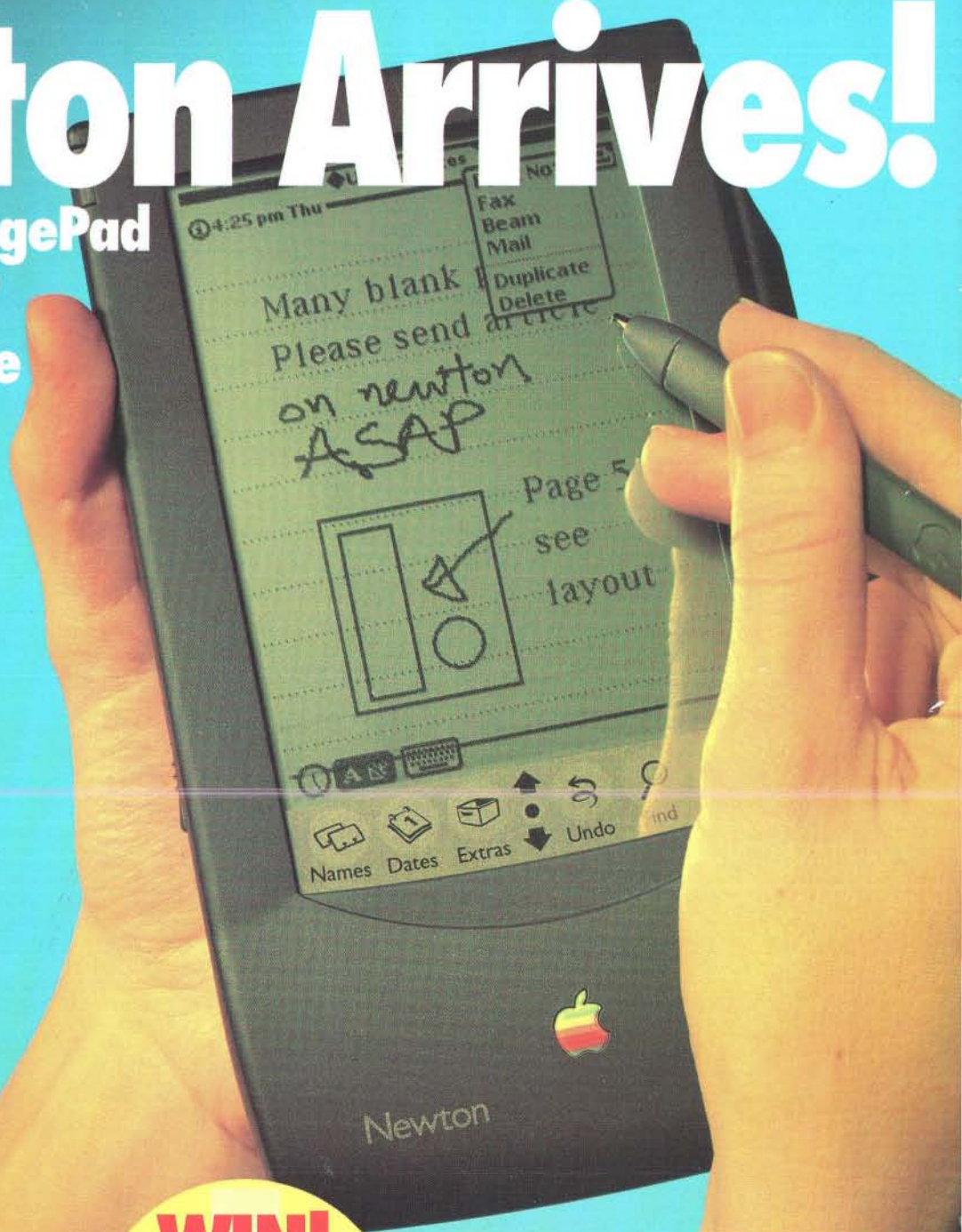
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Full Report Inside

Art Attack
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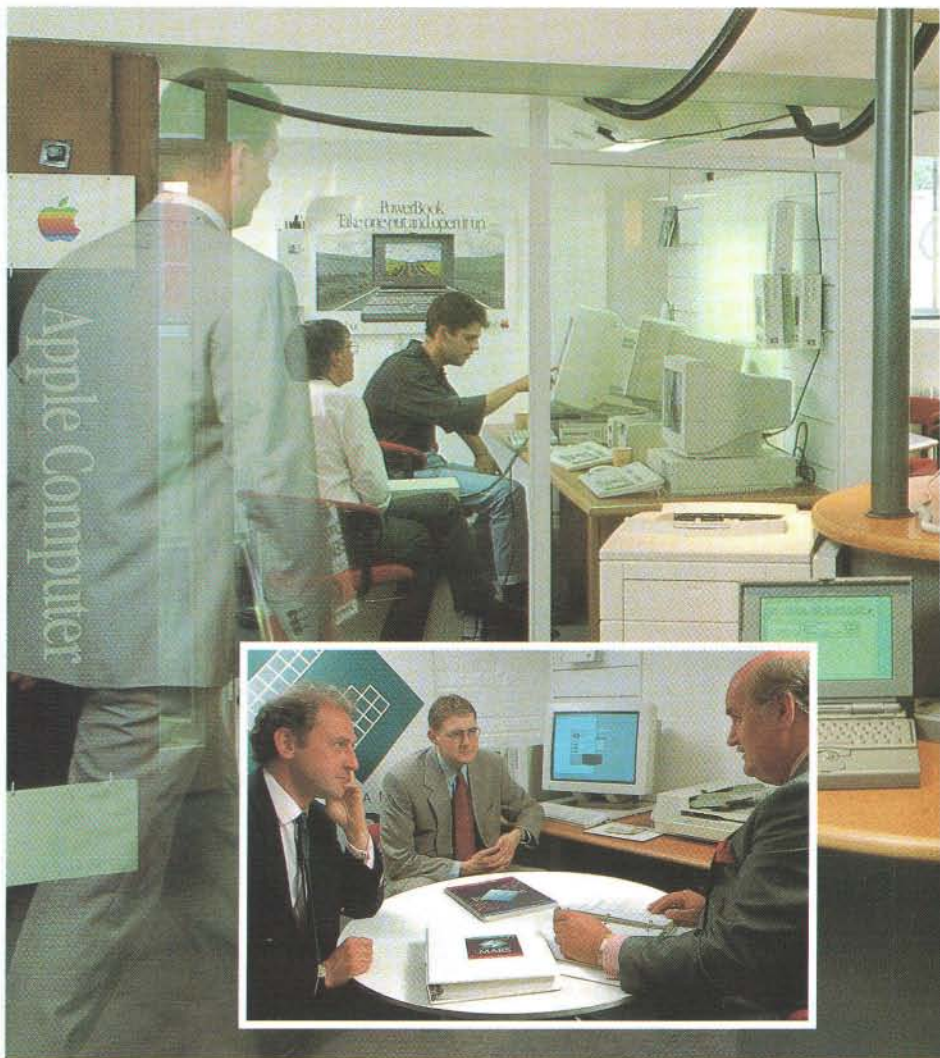
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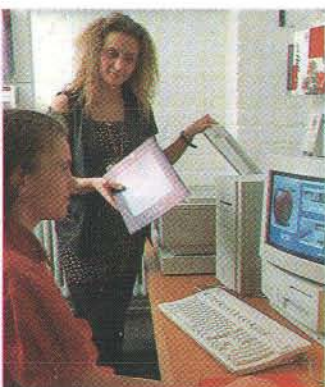
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First with the Mac news, views and reviews

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Edited by Guy Sneesby

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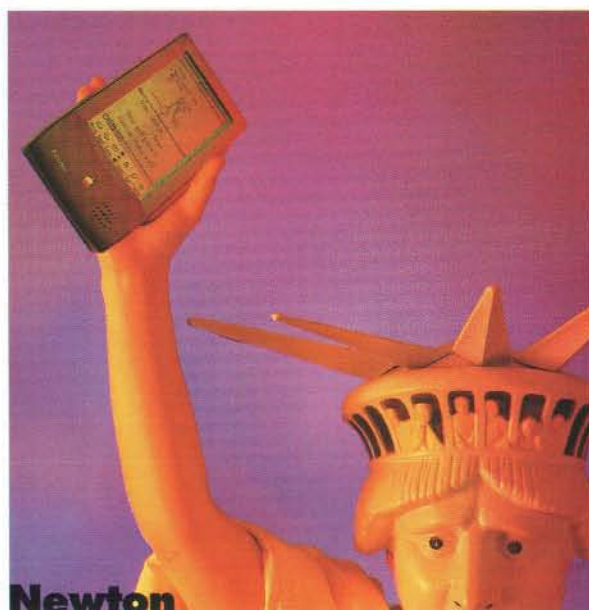


Front Cover Photography

Julian Hawkins

MacUser

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Rock 'n' roll heroes, p114.

INSIDE MACUSER

Mac Gen-ious



Humans, we keep being told, are 'determined' by their genetic code, a double piece of twisted pair cabling two billion pieces long.

But what makes a Mac, a Mac? There's the Mac system software architecture, and core hardware – the silicon, the casing, the ports. Added to these, there are a series of characteristics which could be defined as Mac-like – the Finder, for example, and baffling but polite dialog boxes, and the stylish little system bomb icon when your Mac crashes, *and* the fact that in almost every program but not every program command-a means select all. Well-known hardware ideosyncrasies include SCSI connectors, high-quality monitors, and overpriced Apple cabling.

Many of these defining characteristics are now negotiable. It pares down its products to fit into their respective niches and adopts new technologies to remain competitive in terms of power and price. Apple's problem will be to sort the core from the periphery. Go back to SCSI – many regard it as essential but do home users *need* SCSI ports? It's like putting electric windows in a mini, or a brain in a brontosaurus. Overkill, in fact. More than that, it's expensive overkill in a world where cutthroat pricing is squeezing profits and R&D allocations. The same process dictates that system software is now modular: if you need QuickTime, you can have it for a price.

One other question. In among all that genetic fusilli – of the human kind – is there a piece of code which predilects certain people towards Macs rather than PCs? Nurturists all, we'd dismiss the Mac gene as as fanciful as the notion that crime is hereditary rather than socially constructed – *except* for the results of a strange but true experiment unwittingly conducted by one of our contributors who placed an advert in the lonely hearts section of *Time Out*, the London listings magazine.

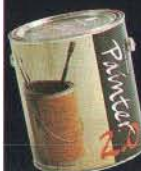
She made no mention of computers, being concerned with affairs of the heart. However, of 30 replies, no fewer than six wrote at length about their Macs. Obviously, there are people with an emotional, almost genetic, entanglement with Mac technology. One other important result: nobody mentioned Windows. Clearly Natural selection is heading in Apple's direction.

Which brings us, by a roundabout route, to Jurassic Park. What a peculiar Unix front-end for a 10-year-old to navigate herself through. And what kind of system is that you have to power down the entire ringmain, lights, electric dinosaur fences, the lot, just to restart? An evolutionary dead-end you might say, but you probably knew that about dinosaurs already.

Caroline Bassett

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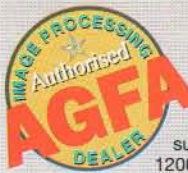
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"... easy to use and effective ... performs well on
 networks ... very accessible user interface."
 MacUser UK 2/4/93



MacUser



Syquest 105Mb 3.5"

	drive	m
21Mb floppy	£249	
44Mb Syquest	£239	
88Mb Syquest	£359	
88/44Mb Syq	£419	
105Mb Syquest	£449	
128Mb Optical	£699	
600/650 MO	1899	

All external drives (except 21Mb floppy, 105 Syquest) have 90-270V power, twin 50 way SCSI, pushbutton ID switch, platinum grey "zero footprint" aluminium housing. Installation kit comprises UK mains cable, SCSI system cable, terminator, software.

Warranty: 1, 2 or 3 years. **Delivery:** £8 next day. **Prices exclude VAT.**
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WAVE

Newsdesk

Apple unwraps 14oz palmtop, handful of apps to ship at launch

Newton debuts as MessagePad PDA

APPLE has formally launched the first Newton PDA, renamed MessagePad, on the eve of the Macworld Expo in Boston, US. The communications assistant will cost £599 for the base configuration, slightly less than expected, but the Newton fax/modem and Connection Kit will be available as options, not as standard.

The handheld device measures approximately 18.5cm by 11.5cm by 1.9cm and weighs a mere 14oz. It runs on a 20MHz ARM 610 processor which is roughly equivalent in performance to a 486 PC. The pressure-sensitive passive matrix LCD screen has a resolution of 336 by 240 pixel size and is driven using a flattened plastic stylus.

The MessagePad comes with 640K of RAM and 4M of ROM for the system software. Apple has adopted a standard PCMCIA expansion slot which acts as memory connector, floppy drive and expansion slot. It supports PCMCIA Type II cards, which Apple and third-parties will be offering in the form of memory upgrades and fax/modem cards. Apple initially has 1M and 2M memory cards on offer, at an expected cost of £100 and £200 respectively.

The Newton has a simple GUI. Operations are based around its Notepad but a series of icons at the bottom of the screen allows access to other services such as address book, calendar and communica-

tions. A handwriting recognition option is available for turning writing into readable text using an in-built dictionary of over 10,000 words. It can also turn rough sketches into symmetrical objects and store them. There is no save option, as the MessagePad saves automatically. Items are deleted by erasing them with the pen.

Clive Girling, Apple's PDA product manager, commented that of all the Newton technologies included in MessagePad,



handwriting recognition is the biggest battery drainer. The MessagePad uses four AAA alkaline batteries and Apple provides a battery recharger kit as an option.

The machine boasts an Information Architecture that recognises different data types such as dates, names and even maps. It also has a standard Mac serial port and with the Newton Connection Kit it can transfer or

receive information from Macs or Windows-based PCs via Universal In/Out boxes. All Newtons can beam information to one another through an infrared Datalink, which also supports the Sharp Wizard IQ, but it is limited to one metre.

Apple will package the MessagePad in three ways: on its own; with a 9600bps send-only fax/modem; and with the modem plus the Newton Connection Kit.

A limited number of US-oriented applications will be available from day one. These include Fodor's 94 Travel Manager, which offers maps and information on major US cities; the Fortune 500 Guide To American Business, a business templates application; Mystery Games containing whodunnits; and a series of puzzles called Word Games. However, Apple claims by the end of 1994 there will be at least 300 different applications on the market.

Apple US is going all out to sell Newtons in as many retail outlets as it can and will be putting them in the Apple mail order catalogue. Girling said: "Apple UK is looking at very broad distribution for the Newton, by the end of the year you will see them in mail order catalogues, not necessarily Apple's." Girling hinted that Apple had not ruled out the possibility of its own mail order outfit, with Kingfisher, the owner of Comet, as one of the distributors being considered.

The MessagePad will not be available in volume in the UK until September.

Apple 0800 127753



LATE NEWS

Users Cash In On Select 310's Memory Lapse

Apple has conceded that memory on its budget 300dpi laser printer, the Select 310, is woefully underspecified. To make amends, the company is offering a 1M memory upgrade free of charge to users who take their printer, along with the associated paperwork, to the dealer that supplied it, before 24 September this year.

The problem with the 310 is that with only 1M RAM fitted as standard, it has the unrealistic limitation that it can only output documents with two fonts or less.

Apple 0800 127753

Apple Chiefs Named In 'Inflated Stock' Row

Top Apple executives, including chairman John Sculley, have been accused by investors of making misleading statements regarding the company's business prospects and potential for growth.

This financial year executives are reported to have disposed of large chunks of their personal holdings running to millions of dollars. Second quarter losses announced on 15 July came to \$188m. Apple denies any impropriety.

(See Newsdesk page 20)



ON THE HORIZON

System 7 Clones For Christmas?

Rumours about Apple's plans to open up System 7 completely are rife, with one high-ranking insider from a large UK Mac account describing the putative plans as "a done deal" and predicting Mac clones on the market before Christmas. In the US, a leading IT newspaper quoted Rick Spitz, vice-president of Apple's System Software Division, as saying the decision to fully license System 7 had already been taken by new CEO Michael Spindler, and that it was just a matter of when. However, the story was repudiated within a week.

Spitz did not deny the rumours but told *MacUser* that he had not discussed licensing System 7 as a whole and said his general statements about licensing parts of System 7 had been quoted out of context.

PowerBooks Get The ARA Connection

Apple Remote Access 2.0 is set to ship this autumn with a host of new benefits for the remote PowerBook user. These include: a new configuration window which allows nomadic users to set up a range of connection information, catering for different dial-up locations; dial-without-dial tone; error correction schemes for cellular modem users; and a Quick disconnect button. It is also rumoured that, with the release of version 2.0, ARA will once again be bundled free with PowerBooks.

AV Macs outstanding but Caspar loses voice

APPLE has launched two of the fastest and most fully-featured Macs yet, at extremely aggressive pricing.

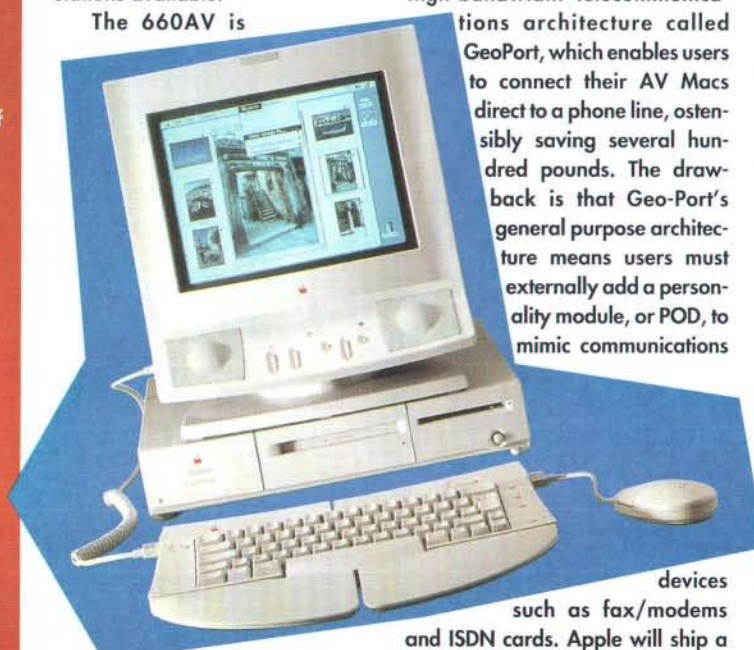
Originally billed as the first ever multimedia Macs, the eagerly-awaited Centris 660AV and Quadra 840AV (formerly known as Tempest and Cyclone) have been repositioned by Apple as business, graphics and education tools.

Disappointingly, Caspar speech recognition and synthesis software, renamed PlainTalk, will not ship in the box with AV Macs outside of North America because of localisation issues.

And users expecting full-screen video-editing workstations straight out of the box may be similarly underwhelmed.

Nevertheless, with upgraded 68040 processors and AT&T 3210 DSP chips, operating over a fast new system architecture, the 660AV and 840AV are among the most powerful graphics workstations available.

The 660AV is



Centris 660AV: Video, CD-quality sound, and dial-up comms.

based on the Centris 610, but with a significantly faster 25MHz 68040 processor, complete with FPU it is eminently more suitable as a graphics and multimedia machine.

The addition of a 55MHz AT&T 3210 DSP chip provides the 660AV with a dedicated engine for

processing video, sound and handling high-bandwidth 'dial-up' comms.

Input and output ports are provided for both S-video and composite video which means video can be taken directly into the 660AV, from Camcorders and VCRs, and directly output to NTSC, PAL, VGA and SVGA monitors.

Similarly, stereo sound input and output ports provide support for 16-bit CD-quality sound, allowing stereo input from external sources and stereo output from CDs or Mac applications.

The 660AV works with all Apple displays up to Quadra 840AV: 21in. 1M of video memory is supplied as standard for the display of thousands of colours on 14in and 16in displays and 256 colours on 21in displays.

Among the more innovative options on the new machine is a high-bandwidth telecommunications architecture called GeoPort, which enables users to connect their AV Macs direct to a phone line, ostensibly saving several hundred pounds. The drawback is that Geo-Port's general purpose architecture means users must externally add a personality module, or POD, to mimic communications

devices such as fax/modems and ISDN cards. Apple will ship a 9600bps fax/modem POD for around £100 at the time of launch and, according to product manager, Keith Gould, many third-party manufacturers have also committed to GeoPort. However, with the twin hurdles of a new architecture and BABT approval to overcome, it seems unlikely that GeoPort PODs will become either cheap or ubiquitous in the foreseeable future.

The Quadra 840AV, based on the Quadra 800, shares the same audio, video and telecommunications ports as the 660AV, but in terms of processing power is in a different class.



Its 40MHz 68040 processor makes it the most powerful Mac CPU ever. Coupled to a 66MHz AT&T 3210 DSP chip, which operates as graphics accelerator, as well as audio, video and comms engine, it is claimed to process some Photoshop and Painter filters at around twice the speed of a 66MHz Dell 486 DX2 PC.

Critics of the Quadra 800's limited display capacity will be pleased to note that the 840AV's video memory is expandable to 2M, permitting 24-bit colour to be displayed on a 16in monitor and saving many users a NuBus slot. Standard VRAM is 1Mb, or 256 colours on a 21in display. The 840AV comes with 8M of RAM expandable to 128M.

Each AV Mac has Ethernet built in and comes with ES:F2F, a LAN-based videoconferencing packaging. The machines will ship in September in two configurations: the Quadra 840AV 8/500 with internal CD costs £3250 and the 840AV 16/1000CD £3900; the Centris 660AV 8/230CD costs £1950 and the 8/500CD configuration £2260. Upgrades from the Centris 610 and Quadra 800 cost £1149 and £1799.

PlainTalk and an accompanying hi-fidelity PlainTalk microphone will be sold separately outside the US, but pricing has not yet been fixed.

Apple 0800 127753

Apple sounds off with CD-quality displays

APPLE will ship a multimedia monitor and CD-quality speakers, called the AudioVision 14 Display and the AppleDesign Powered Speakers, to coincide with the September launch of the Centris 660AV and Quadra 840AV.

The 14in Display has a built-in microphone, which Apple says is suitable for voice recognition, videoconferencing and annotation, and stereo CD-quality speakers engineered for near-field listening. Connections are available for external speakers, CD players and headphones.

Apple product manager Keith Gould said the display could be used in conjunction with the Centris 660AV, for presentations, videoconferencing,



AV add-ons:
Sound samples.

education or multimedia authoring.

The display ships with a software package of control panels at a cost of £500.

The AppleDesign Powered Speakers, manufactured for Apple by TrueTone, bring CD-quality output to all Macs, and support most CD-players, audio cassettes and TVs with sound output.

They come with a dual input mixer, for computer and CD-generated sound, and all the necessary cables, for £100.

Apple 0800 127753

Japanese plant fire blasts memory prices sky-high

AN explosion in an epoxy resin plant in Japan has meant more disruption to the supply of memory chips, and raised prices 50% in a week. The resin is a vital component in the production of DRAM and is certain to further aggravate an already starved memory market.

The fire happened at Sumiro Chemical company which provides 60% of the resin used by memory manufacturers to enclose the chip

dye. With Sumiro commanding such a large share of the market, observers say it will take time for the other resin manufacturers to respond to the shortage.

Kingston Technology, a major US memory manufacturer says it is uncertain what effect the fire will have on availability. Nevertheless, it has warned that problems still exist in the reluctance of chip manufacturers to invest in new production lines to meet the ever increasing demand for memory, ignited by rising CPU sales, larger applications and greater system requirements.

Andrew Henderson, financial director of SIMMs International, said: "We are not ripping end users off, the price of memory is so high that if you bought 256M of RAM for a Quadra 950, it would probably cost you £10,000 for memory – more expensive than the CPU itself."

Kingston predicts prices will continue to rise well into next year.



Replica targets Acrobat troupe

FARALLON is to join Adobe and No Hands Software with the introduction of its own document exchange program, Replica. The program is available immediately for Windows and is expected on the Mac in the final quarter of this year.

Like Acrobat from Adobe and No Hands' Common Ground, Replica aims to enable users to exchange documents regardless of the application, font, graphics or computer platform used to create them. The program comes in two discreet parts: Viewer and Creator.

The Creator captures and compresses the document for distribution across the network, or via email, and creates a document in a cross-platform file format. The Viewer opens Replica documents for viewing. As with Acrobat and Common Ground, users cannot edit from within the

Viewer application, but text, objects and graphics can be copied to the clipboard and then pasted into a different application for editing.

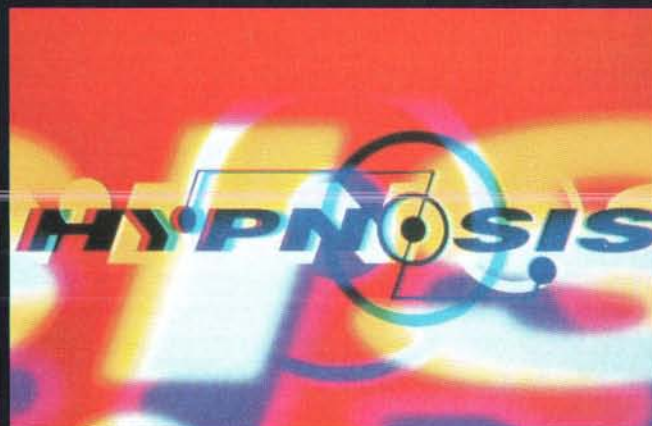
Farallon claims the Replica Viewer retains the original look of the document by reproducing graphics and using font embedding to reproduce the original fonts in the Replica document. These can be distributed to users without those fonts on the system. Replica is dedicated to supporting TrueType fonts but also plans to cater for Adobe PostScript fonts at a fixed screen resolution.

Replica does not have annotation capabilities but, unlike Acrobat, the Viewer is distributed free of charge to users. A single copy of Replica including the Creator and Viewer will cost £75 and a ten user pack £564.

Gomark 071 731 7930



TV Macs Rave On



Hang the DJ... fresh beats on Mac.

Lucy Robinson was working as a Channel 4 secretary when a memo advising producers of the need for a happening new music programme happened across her desk.

A Mac devotee, she knocked out an outline for a music and dance show which has its roots in the rave scene but which dispenses with services of DJ presenters, instead using Mac-generated graphics to pro-

vide visual links – a cross between *The Chart Show* and *Hit Man & Her*.

Hypnosis began life a fortnight ago as peak early evening Sunday viewing. It consists primarily of live interviews and "the latest fresh beats from the country's top rave clubs", with Robinson in the producer's chair. Graphic sequences are created by designer Jason Fisher-Jones.



BRIEFS

Kids' Play

Three new interactive games for young children are now available from Softline. Fatty BEAR'S Birthday Suprise, Putt-Putt Joins The Parade and Putt-Putt's Fun Pack all feature digitised speech and music, and require users to complete a range of tasks and puzzles. All three are available on CD or floppy disk and cost between £25 and £35.

Softline 081 401 1234

Focus On Printers

A new dye-sublimation colour printer has been released by Focus. The Focus ImagePrinter produces 300dpi full colour prints without loss of resolution on either plain media or transparencies. The printer has 24M internal memory, a buffered SCSI interface and can print an A4 image in less than 100 seconds. The Focus ImagePrinter costs £13,500.

Ambitron 0734 440500

Project Yourself

3M has launched two new data projection panels. The 5150 and 5450 presentation panels slot over the screen of a standard projection machine from which computer images can be directly projected. Both panels can project up to 24-bit colour and come with presentation software and a presentation control unit. The 5450 provides a built-in video capability, while this facility is optional with the 5150. The 5150 and 5450 projection panels cost £4995 and £5795 respectively. 3M Visual Systems 0344 858180

Travesty say detectives as thieves regain stolen Macs

POLICE are being forced to return stolen Macs into the hands of thieves because legal owners are proving impossible to trace.

"It's very frustrating," Detective Constable Rice of East Dulwich police station told MacUser. "We have a terrible problem identifying Apple equipment, but if we can't prove it is stolen, ownership often reverts to the suspect."

Rice pointed to a current investigation where 250 pieces of kit were recovered, of which 26 PCs have already been identified as stolen. So far it has proved impossible to trace any of the owners of the 15 Macs in the haul.

When Rice contacted Apple UK, he was told Apple did not maintain a register of stolen Macs and was redirected to Truro-based Apple dealer, Aztec South West. Aztec set up its own register in April after growing concerned about the impact of stolen machines on legitimate Mac sales.

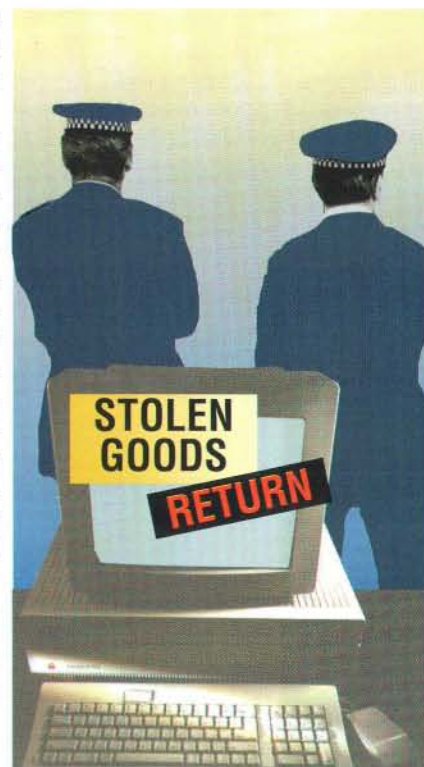
However, technical support specialist Roger Kortas, who voluntarily administers the service, was

unable to place any of the stolen Macs into the hands of thieves because legal owners are proving impossible to trace.

Both Kortas and Rice recounted incidents where they had fruitlessly forwarded whole lists of serial numbers to Apple for cross-reference against its user-registration database. With around 70% of users registering their machines, they felt there would be at least a statistical chance of tracking down some of the owners.

In one incident, Kortas said a Mac was recovered with a piece of diagnostic hardware used by only around 20 dealers in the country and Apple still could not track down its rightful owner.

Russell Brady, head of PR at Apple, said the company maintained a database of registered users through a third-party agency and was looking at



ways of making this information more accessible to the police.

Apple 0800 127753

Streamlined 165 fills PowerBook mid-range

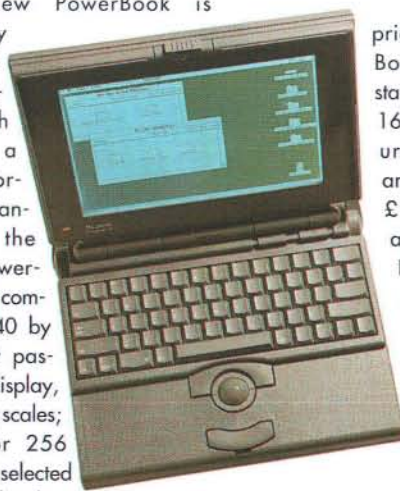
APPLE will supersede the now defunct PowerBook 160 with a faster mid-range portable, called the PowerBook 165, built at lower cost.

The new PowerBook is powered by a 33MHz 68030 processor which gives it a small performance advantage over the 25MHz PowerBook 160. It comprises: a 640 by 400 backlit passive matrix display, with 16 grey scales; support for 256 colours on selected external displays including some VGA and SVGA

monitors; 4M RAM fitted as standard; built-in microphone; sound in and sound out ports; plus all the usual ports and a slot for an internal Express fax/modem.

The estimated price for a PowerBook 165 4/80 stands at £1300. The 165 4/160 configuration will cost around £1600, or £1800 with the addition of an Express fax/modem. The first units are expected to ship in September

Apple
0800 127753



The Powerbook 165: More is less.

Heroes



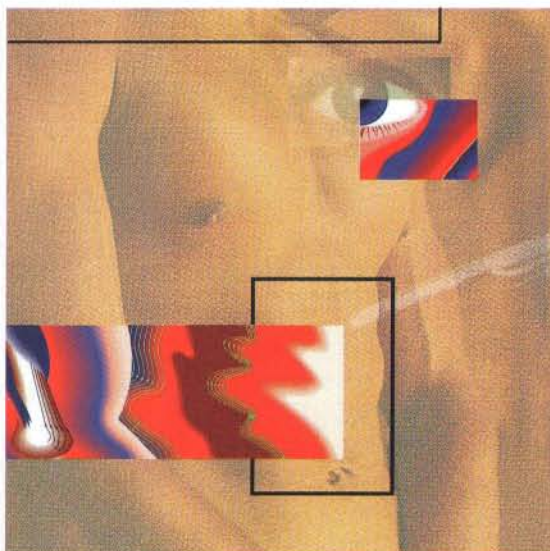
A heroes medal for Andrew Grove, head of Intel and the first man to tell the real truth about multimedia. "I don't know what the hell I'm talking about really," he said when asked to pontificate on multimedia mergers and alliances. And hurrah for Intergraph. Unlike every other high-end graphics company, it didn't contribute to the making of *Jurassic Park*. Not a single dinosaur was given the special effects treatment by the company. You read it here first.

Zeros



If clothes make the man, then you're no-one this month unless you shop in Saville Row. At a briefing, Apple employees revealed that the ultimate fashion accessory, the Newton MessagePad, would slot easily into the inside pocket of a Saville Row suit and some of the more generous Marks & Spencer's designs, but less generously cut Burton suits' came out as a no-no, being too small. The message, it seems, is if you don't have deep enough pockets, then you probably cannot afford one.

UPGRADE YOUR *desires*



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New Adobe Illustrator™ 5.0 for Macintosh®: professional design software that unleashes almost unlimited possibilities for high-end graphics users.

Powerful new features of
Adobe Illustrator 5.0 include:

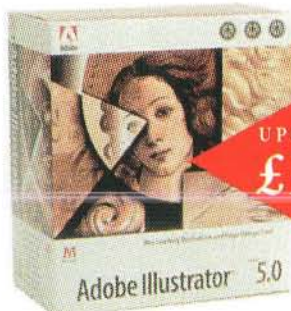
Filters: Create objects and apply complex special effects instantly. Special Path Finder filters allow you to control intersecting parts of overlapping areas.

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Type: And, of course, Adobe Illustrator still handles type in a way that is beyond compare.



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If you have an existing version of Adobe Illustrator for Macintosh, you can upgrade for only £149+VAT for the disk version or £179+VAT for the Deluxe CD-ROM version.

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Just add the creativity of your mind to exceed your wildest dreams.

Macuser 6/8/93



BRIEFS

Upgrade Exchange

US Robotics has announced a clear upgrade path to the ITU-TS (formerly the CCITT) V.Fast standard modems. Buyers of Courier V.32bis and Courier HST Dual Standard modems will be able to buy a voucher which can be exchanged for an upgrade to the 28.8Kbps standard once it is fully ratified. The new standard is expected to come into effect by early 1994 and the upgrade will involve a simple daughterboard swap with a 24-hour turnaround. The Courier V.32bis and Courier HST Dual Standard cost £599 and £799 respectively and the upgrade voucher costs £99.

US Robotics 0753 811180

Good Vibrations

Philips has added a 17in monitor to its family of sound monitors. The 4CM4770 colour display boasts built-in stereo audio capabilities, supports resolutions of up to 1024 by 768 and is flicker free. The 4CM4770 costs £699.99.

Philips IMS 081 689 4444

Hard Disk Heaven

Ideal Hardware has launched the Blue Disc BD-M1000. The 1G external hard disk has a 10ms access time, and features a 512K cache and SCSI-2 support. Utility software bundled with the drive allows read/write caching and disk mirroring. The BD-M1000 costs £999 and its internal version, the BD-MI1000, costs £899.

Ideal Hardware 081 390 1211

Apple bolsters software arm

APPLE has reformed its Mac Software Division into an autonomous division called AppleSoft, which will be responsible for both the Mac's system software and the company's forays in content-based CD-ROMs.

A spokesman for Apple UK described the foundation of AppleSoft as a "strong signal that Apple is becoming more aggressive as a software company".

Apple has not gone as far as floating AppleSoft as a separate company, as happened with applications software arm Claris.

Newly-appointed UK director of AppleSoft, Paul Gardner, said: "The jury is still out on whether we become a subsidiary or remain within the main structure of Apple."

Gardner added that the group would concentrate on "maximising revenue in new areas", and that his division would be "silly not to look at the size of the Intel PC market".

This can only strengthen

already strong rumours in the US that Apple is preparing to sell a PC version of the Mac operating system. "My aim is for Apple software to be the VHS not the Betamax of the IT world," he said.

Gardner added that his priority was to maximise revenues for AppleSoft and that the health of Apple's hardware business was not within the AppleSoft remit.

AppleSoft will be stepping up efforts to license technologies such as QuickTime as well as expanding a fledgling retail software business specialising in CD-ROM titles. According to US sources, the division will be developing and acquiring products that make use of System 7 extensions AppleScript, QuickDraw GX and AOC.

Apple has reformed into five business units:

- AppleSoft Division
- Apple Business Systems Division
- Personal Computer Division
- Personal Interactive Electronics (PIE)
- Claris

There's no place like home with Pixar 3D scene builder

PIXAR has announced an upgrade to Showplace, its 3D scene builder package. Showplace 2.0 handles more models and now supports an open environment for the development of Renderman Interface Bitstream (RIB) plug-ins.

RIB plug-ins are mini-applications which can be accessed from the Showplace menu to help create editable models. Models include fractal terrain, venetian blinds, rooms, stairs and abstract designs.

The upgrade also offers support for the DXF (Document Exchange Format) standard widely used in computer aided design, allowing users to import 3D geometric data from any 3D application which supports DXF.

A library of clip objects comprising symbols, signs, furniture, tools, trees and fruit is included in the upgrade. A new option, called Glimpse, enable users to edit surface appearances. Other features include the ability to nudge objects with cursor keys and pop-ups showing shadow map sizes. The program will ship in the UK by the end of August at a cost of £589 or £419 on CD-ROM. Computers Unlimited 081 200 8282



Showplace 2.0: Picture your ideal home.

Precedent will ease corporate identity crisis



Corporate identity on CD-ROM.

MONOTYPE, Fontware and a corporate identity specialist Hoskins Associates have teamed up to offer companies a CD-ROM based corporate identity management service called Precedent.

By placing companies' corporate identity on CD-ROM, Precedent gives employees access to the company logo, typefaces, templates as well as information about how to use them. If a company wants an identity overhaul, Hoskins is on hand with consultancy. The firm liaises with Monotype and Fontware for typefaces and technical input. Precedent is available in different languages. Hoskins Associates 071 490 5719 Monotype 0737 765959

MacDisk mounts Mac floppies from any PC application

UK-based software house Insignia Solutions has launched a utility which enables PCs running MS-DOS, or Windows, to read, write, copy, delete and even format high-density Mac disks without the need for a file transfer program.

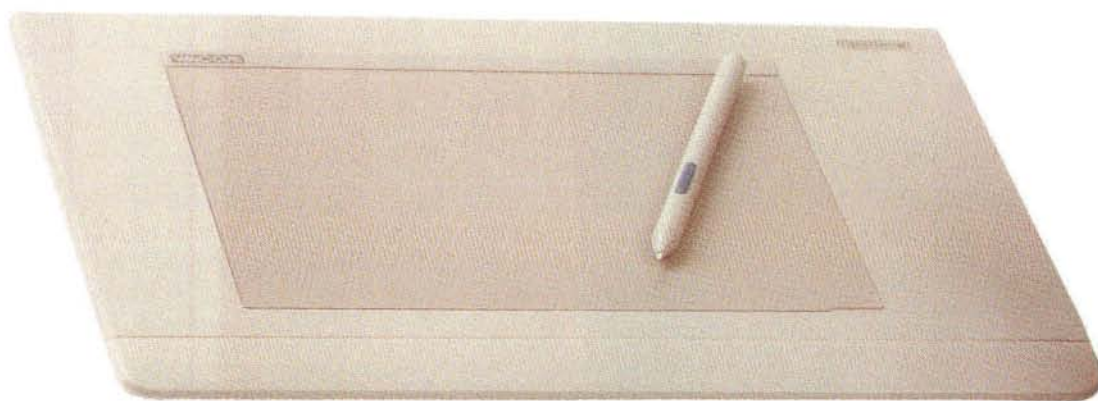
Called MacDisk, the utility allows PC users to open files on a Mac disk from inside any DOS or Windows application or through standard DOS or Windows commands. MacDisk is a memory resident application that can be invoked at any time and includes DOS and Windows utilities which allow users to see full Mac file names and their DOS equivalents.

Insignia is aiming the £79 product at businesses where Macs co-exist with large PC installations and at PowerBook users, who have a PC on their desktop.

Insignia 0494 459426

Fractal Design

Painter 2.0 + WACOM A5 ADB



£519.00!

(RRP £724.00)

Save £225.00 with this extraordinary offer on Fractal Design Painter 2.0 and the WACOM A5 ADB pressure-sensitive graphics tablet. You'll not get a better offer than this.

Fractal Design Painter is the leading paint program available on the Mac. Read the key report on painting programs in this issue if you don't believe us. Painter simulates real artist's tools, giving realistic 24-bit painting tools and effects on the desktop.

The WACOM A5 ADB tablet sets new standards in cordless digitisers. It needs no batteries, is cordless, and out-cheeses the best of mice. You'll not find a better painting partnership than this.

This offer is available from all good Apple dealers, and is open until 5th November.

There are 10 WACOM tablets and Painters to be won in this magazine. If you don't win, buy one! You have 3 months to save up the money....

Create a good image with Letraset...

Painter is a registered trademark of Fractal Design Corporation. WACOM is a registered trademark of WACOM Co. Ltd. Macintosh and ADB are trademarks of Apple Computer Inc.

Letraset Software Products 195-203 Waterloo Road London SE1 8XJ Tel: 071 928 3411 Fax: 071 401 2427

Letraset



BRIEFS

Push Button Monitor

Aydin Controls has announced the Ranger 21F1, a 21in colour multi-sync monitor incorporating an FST (Flatter Squarer Tube) display with push button control of the micro-processor and an LCD display for set-up information.

The monitor also sports an anti-glare/anti-static screen and meets MPRII low-radiation standards. The Ranger 21F1 costs £2690.

Aydin Controls
0462 458804

Fonts On A Floppy

After the release of Serials Type Collection 3.0 on CD-ROM, CD Enterprises has launched the low-cost collection on floppy disk. The range comprises over 1000 TrueType and PostScript fonts and includes screen and printer fonts. The minimum purchase is 12 faces at £5 each. The collection is also available on SyQuest disk.

CD Enterprises 0457 865971

Calls Abroad For Less With ISDN

BT has announced price cuts on its ISDN international services. The reductions will take effect from 29 September 1993 and will represent a 27% saving on international ISDN calls operating at transmission speeds of 64Kbit/sec.

ISDN services affected include, file transfer, Group 4 fax and videoconferencing.

British Telecom
0800 181514

CEO removed to gee up Kaleida

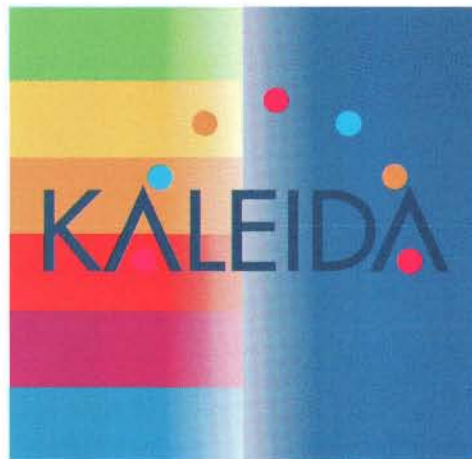
KALEIDA, the company formed by Apple and IBM to develop and license a multimedia architecture known as Script X, has thrown over its CEO in a move that analysts believe reflects the company's frustration with the slow progress in

the past five years has helped develop IBM's multimedia strategy.

In a situation which has striking parallels with the removal of Apple's former CEO, John Sculley, Goldhaber has stayed on to try and attract more backers as a Script X evangelist, while Braun will take over the day-to-day running of Kaleida.

So far, Toshiba, Mitsubishi and Scientific American have backed Script X, but US analysts say that many of the big names Kaleida needs to attract are waiting to see what Microsoft will produce as an alternative.

Microsoft has yet to unveil a competing



producing Script X and attracting third-party backers.

Kaleida's first CEO, Nat Goldhaber, a venture capitalist and founder of PC/Mac networking software house Tops, has been replaced by former IBM employee Mike Braun, who in

product, but suggestions that it is working on something similar appear to have stalled Kaleida's progress. Kaleida's lack of success here is also believed to be behind Apple and IBM's decision not to float Kaleida as a public company.

Biggest loss ever as Apple shares dip to six year low

THE sharp decline in Apple's fortunes was underlined when the company posted its largest ever quarterly loss for the third quarter ended 25 June. A charge of \$320.9 million (or \$198.9 million after tax) to cover global job cuts and restructuring was chiefly to blame for loss of \$188.3 million, nevertheless, Apple's operating profits had already slumped to \$44 million on sales of \$1.86 billion before charges.

The underlying weakness of Apple's trading position – gross margins have fallen from 44.3% a year ago to 32.5% – was reflected in the company's share price which has dipped below its 1986 level.

Senior Apple executives including current CEO Michael Spindler, former CEO John Sculley,

the chief financial officer Joseph Graziano, a co-founder and several other board members were among the smattering of shareholders who reportedly disposed of great chunks of their holdings in Apple earlier this year – at the then higher prices.

The same board is now being criticised for not acting quickly enough to avert the mounting problems that now afflict the company.

Apple has also blamed what it calls "the weaker than expected European economy" for the poor results. The company's drastic overhaul of its European operation also confirms reports from its own resellers that Apple's performance has been especially lacklustre in Europe.

Calcomp masters thermawax output at speed

CALCOMP has unveiled two fast colour thermal wax printers, stemming from the ColorMaster Plus XF family. Running on the latest Intel 33MHz 80960CA Risc processor, they can process a 5M PostScript file in two minutes, five times faster than older CalComp ColorMaster Plus PS models.

The 6603XF and 6631XF are A4 and A3 printers, with 300dpi resolution and PostScript Level I Phoenix interpreters.

An upgrade to Level II is expected before the end of the year and, according to the company, will probably be free. The printers have colour profiles which support all the major colour matching standards.

CalComp's printers will ship this month. The A3 model costs £7995 and the A4 is £4595.

CalComp 0734 344012



ColorMaster Plus XF: Five times faster.

TDS Designer enters graphics tablet market

TDS CAD-Graphics has launched two Quora Cordless Designers graphics tablets in a bid to dent a market dominated by German and Japanese manufacturers.

TDS' pressure-sensitive A3 and A4 tablets have 128 pressure levels, and are accurate to a resolution of 1000 points per inch. The A3 version costs £795 and the A4 £580. Both support Mac, Sun and PC platforms.

TDS 0254 676921



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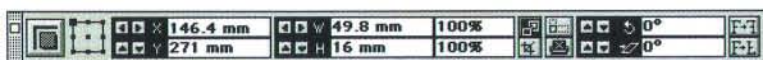


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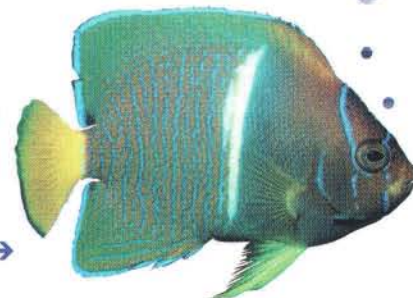
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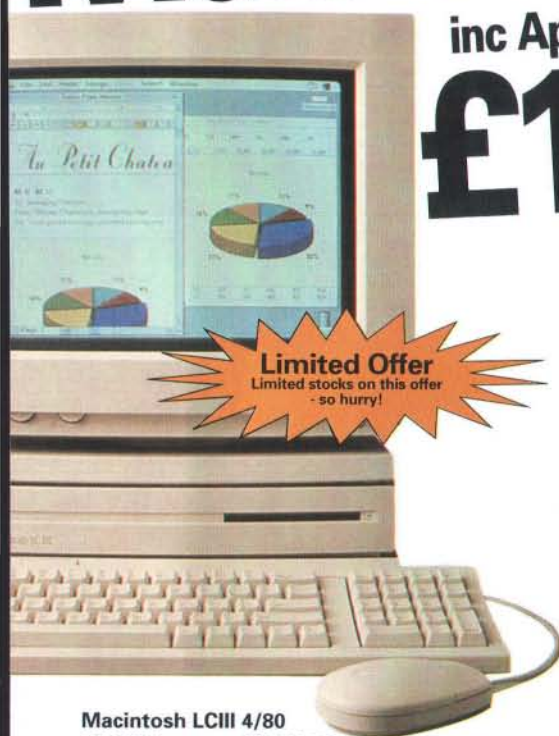
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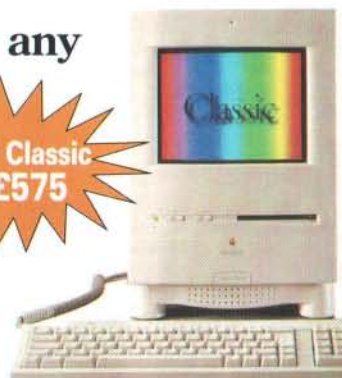


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NEWS ANALYSIS

Key to Apple's future as an open software company is an open document technology that allows the exchange of data across applications and platforms. **John Lettice** reports.

Olé For Apple

Apple's announcement of OpenDoc earlier this year is a further sign that the company is repositioning itself as a challenger to Microsoft in the mainstream system software market.

OpenDoc is intended to be an operating system-independent data sharing technology; a kind of cross-platform Publish and Subscribe. And although at the announcement, Apple stated that OpenDoc was intended to work with Microsoft's OLE 2, effectively, it is intended to fulfil the same role, more flexibly.

The list of supporters Apple has gathered for its 'standard' suggests the sharks are gathering around Microsoft. As part of OpenDoc, Apple has adopted IBM's System Object Model (SOM), an object sharing technology which is gaining substantial support in the Unix market, and which IBM is trying to present as an independent, open industry standard for moving data objects between applications across platforms.

OpenDoc's other supporters are heavy hitters in the PC software market. WordPerfect is now co-operating with Apple to implement OpenDoc under Windows and this represents the most direct challenge to Microsoft. However, the involvement of Borland and Novell, neither of which are great friends of Microsoft, is also significant, and the OpenDoc sources suggest that the remaining major holdout, Lotus, is likely to announce support for the standard in the near future.

The case for users embracing OpenDoc rather than OLE 2 is put

succinctly by Cliff Reeves, IBM manager of object technology, and major SOM evangelist. "OLE is a complex programming model and when you use OLE, your data is mixed and requires Microsoft data formats. Your data is now incomplete without a Microsoft-supplied DLL [Dynamic Link Library]."

Microsoft presents Windows as the open industry desktop standard, and therefore from Microsoft's point of view, it makes perfect sense for data sharing technologies to be Windows-based. The rise of connectivity, however, means that the number of platforms software developers have to support is growing far faster than the Microsoft-owned support.

Microsoft. His view is that OLE-type functionality should be provided by the operating system, but points out that, to make Lotus Notes work properly under Windows, Lotus had to build operating system-type features on top of Windows.

Landry also gently suggests the possibility of a Microsoft reverse over OLE, pointing out that if OLE is adopted by all software developers, then it can be defined as an OS feature, but that if, say, it were only available for Microsoft Word and Excel, it would be an application feature. It would then be open season for companies wishing to supply alternatives.

At the moment, OpenDoc is significantly behind OLE in terms of



Novell's problems with OLE are equally clear, and provide further justification for the networking company's current close co-operation with Apple. Even Lotus, currently standing clear of OpenDoc, has tacitly conceded the need for an independent standard. Lotus chief technology officer John Landry says that the company supports OLE 2, but is still heavily critical of the way Microsoft is handling it. There is definitely a need for OLE or an equivalent, but he feels it should be available for non-Microsoft platforms, and it should be an open standard, not one controlled by

development, but current OLE systems are slow and resource-hungry, and because its implementation is a difficult programming task, it faces a steep climb in order to be accepted as an industry standard. Meanwhile, the current OpenDoc partisans intend to implement Apple's standard alongside OLE, initially making it an effective add-on technology that will allow machines to communicate beyond the Microsoft world and giving Apple a foothold outside the Mac market which it can eventually exploit with the help of Novell.



BUSINESS

Aldus Strengthens European HQ

No sooner has Apple scaled back its pan-European HQ and devolved power back to the country divisions, than Aldus announces it is strengthening the role of its Edinburgh-based European HQ.

Although Aldus will continue to operate four regional subsidiaries, Aldus Europe will establish a pan-European marketing strategy and a common organisational structure for the different subsidiaries. Aldus claims that the changes will help the company better address the single European market.

Sales Up For Iomega

Iomega, the supplier of high-capacity Bernoulli and floptical removable media, has reported a 15% rise in sales to reach a turnover of \$36.5 million for the second quarter. Net profits were \$0.9 million. Although the company has managed to cut its operating expenses by 3% as a result of restructuring undertaken earlier this year, it suffered from a decline in gross margins, from 47.6% down to 40.6%, thanks to higher sales of lower margin products.

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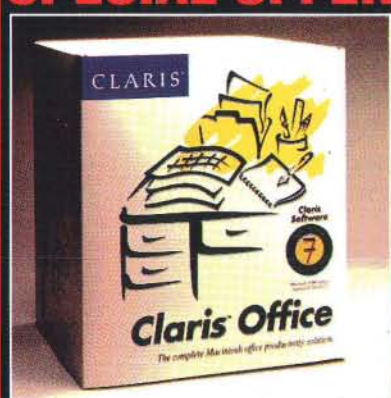
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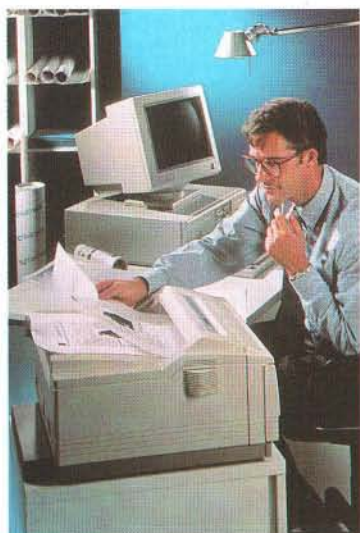
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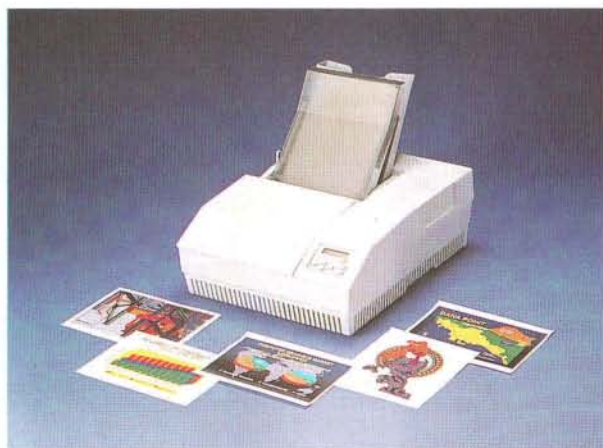
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GRAPHICS: PAINT

Paint Alchemy

A powerful plug-in for creating special effects with paint programs.



Paint Alchemy is a plug-in which can be used with any application that supports Photoshop's plug-in format and offers an environment comparable in power to many 'natural media' applications. Most other Photoshop plug-ins, like blur or unsharp mask, are more limited, offering a single function with a few variable parameters.

The program comes on a 3.5in disk, accompanied by a informative manual. The disk contains 36 brush effects, but you can buy a separate plug-in with 50 additional ones. These allow you to create an array of effects ranging from wacky to natural media.

Loading Paint Alchemy is simple. When used in conjunction with Photoshop 2.5, just drag the contents of the floppy to the Photoshop Plug-Ins folder and you're away.

Like other plug-in packages, such as Power Tools, Paint Alchemy is very memory hungry, so the more RAM available, the better. It also allows you to set the amount of memory available for constructing previews (default 1M) and requires free RAM to create the effects.

After making a selection in Photoshop, Paint Alchemy is chosen from its own sub-menu under the Filters menu. Once open, it appears on screen in the form of five index card-style dialogs - Brush, Colour, Size, Angle and Transparency - in addition to the Style and Preview menus.

The Style menu offers standard options to get you going, and it's a good place to start creating your own custom effects. Each custom style can be easily altered via the Control Cards and is saved into its own file and placed in the same folder as the application. To find out what kind of effect the current settings will have on your image, you can preview the results through a small white-outlined rectangle which appears on the original picture. This can be dragged anywhere on the image, and the before and after effects compared in two separate windows at the bottom of the screen.

Once you have decided on a style, the next thing is to choose a brush. The Brush card offers six standard types and you can also use any PICT file as a brush. There are around 50 pre-defined styles which can be applied to either, and different attributes can be selected from the layering, randomising, density and positioning options.

The brushstroke and background colours can be set in the Colour Card, and can either derive from the selected image or from a solid colour. You can use the hue variation to create confetti-like effects or saturation to produce brushstrokes

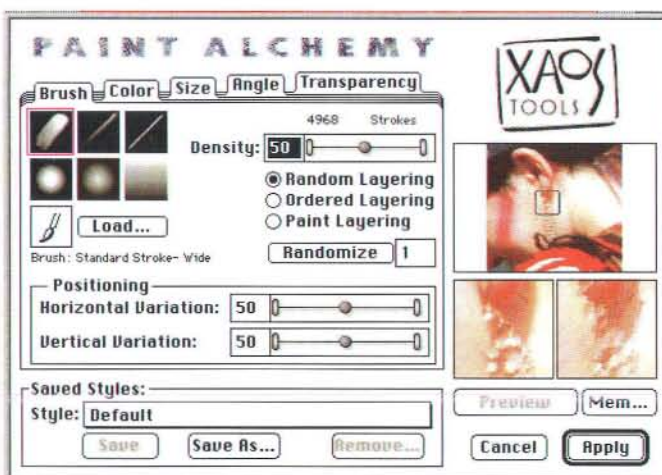
which fade from a rich colour to washed-out. The variation controls let you vary the strokes from the initial brush colour.

The Size card lets you control the size of the brush, and vary it based on either the position of it in your image or on the colour information contained in the image. These options are presented very simply by two slider controls, which allow you to set the size and variation of the brush. The size can also be controlled via a pop-up menu either randomly, by radial distance, vertical or horizontal position, hue, saturation or brightness. The angle card works in a similar way, and using the various options offered by both can yield stunningly realistic natural media effects.

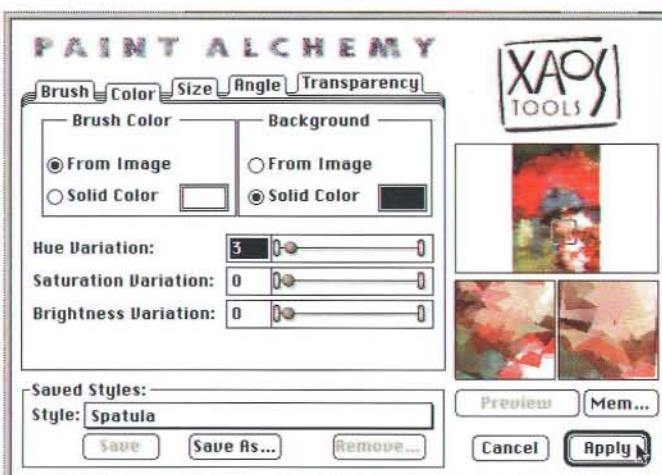
The Transparency card lets you control the opacity of the brush effect according to the variations chosen from the pop-up menu.

Overall, Paint Alchemy compares favourably with the kind of effects found in Letraset's Painter, although the latter allows more control over the non-automated creation of artwork. For a plug-in, though, it is brilliant and should be high on the shopping list of all graphic power-users.

Paul Wootton



Paint Alchemy's index card-like interface allows you to select and modify a brush to create natural media and wacky effects.



The preview box can be moved to different areas of the image and allows you to see the effects that a filter will have.

About

Paint Alchemy



Pros Great natural media filters with a vast amount of control

Cons Needs huge amounts of RAM to work with high-resolution images

Manufacturer Xaos Tools

Price TBA

Requires Application such as Photoshop; System 7; 8M RAM

UDistributor Xaos 0101 415 558 9267

MULTIMEDIA

Shoobox 1.0

A Photo CD-compatible multimedia database for cataloguing images.



As Kodak aims to convert us from silver halide film to digital images on

Photo CD, so in the brave new digital world we will no longer store photographs in a cardboard Shoobox but Kodak's electronic Shoobox image database for Windows and Mac.

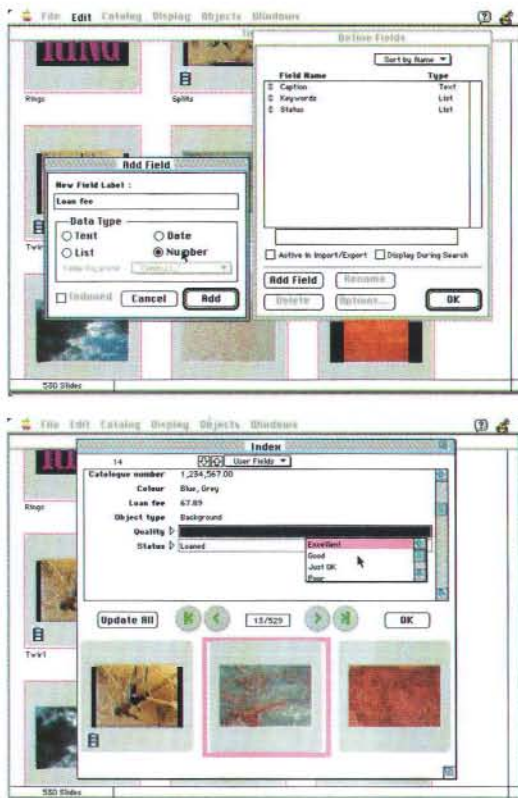
While Shoobox is being promoted as part of Kodak's Photo CD family of software products, it is in fact a complete multimedia database that can store all types of data. It supports Photo CD and all the standard image formats – PICT, TIFF and EPS – as well as sounds in AIFF formats and QuickTime movies. As such, its real competition is products like Aldus' Fetch and Canto Software's Cumulus.

Photo CD is rapidly establishing itself as the cheapest route to digitise colour photographs for the Mac, especially for image database applications, and while other image database vendors are likely to offer support for Photo CD in the next versions of their products, Shoobox has it right now.

Shoobox is also a close relative of Kodak's Browser software used in the Catalog Photo CD format. The Catalog format is designed to allow up to 6000 images to be shipped on one disc and is designed specifically to allow image libraries to publish database catalogues of their collections.

Building a database with Shoobox is very easy. Each database file is called a Catalogue. To create a new one, you just click on the new command and name the file. Although the database can hold an unlimited number of images, Kodak says a Catalogue is limited to 30,000 images because performance becomes so poor as to be unworkable after this point.

Images can be added to the database individually, by folder, or as a whole disk, including or excluding its sub-folders. In this



With Shoobox you can create your own custom database fields as text, numbers, dates or look-up lists.

Each image can have notes attached and a selection of keywords to make it easier to search for images.

way, you can catalogue a whole hard disk, optical disc, SyQuest cartridge or Photo CD disc just by selecting it in the Add Folder dialog box.

When we ran Shoobox, it found 520 image files and took just under 10 minutes to catalogue them in the database. During the process, the program builds a thumbnail image – at the size and resolution of your choosing – of each image and stores basic information about it, including the file name, the path name, volume, file type, file size, image resolution, creator, creation date and last modification date.

A standard Shoobox database also has fields which let you attach a caption and a set of keywords to each image. You can add a whole set of your own custom fields – either text, a number, list or a date – to a database. However, the interface for adding fields is clumsy and confusing.

Shoobox has been designed on the assumption that users would first catalogue their picture and then add information to its record. To aid this process, there is an index command that allows you to go through any selection of the images and input data into both the default and the user-defined fields. This offers a useful

update feature, but, again, unfortunately, it is hampered by a poor user interface.

Once the database is built, there are many options available for finding images. You can do complex searches using 'and', 'or' and 'but not' statements on any field in the database. The options are very comprehensive, and allow you to display, mark, select or count the records that match the search criteria you set.

Once you have found an image (or images), you can view the thumbnail or, by double-clicking it, see the original file. If the volume on which the image is stored isn't mounted, the program will prompt you to insert it, telling you which disc to insert and which media it is on. As well as displaying all the supported image file formats, Shoobox can play QuickTime movies and sound files.

Once opened, you can save the image in any of the supported image file formats. For example, you can open a Photo CD image – you nominate which of the five resolutions stored in the image pack you want the application to open – and then save it as a PICT or TIFF file.

You can look at a file with Shoobox or have it open the file in an application of your choice. However, you can only

nominate one application for all file types. It would be useful to nominate different applications for different file types.

Shoobox's other neat feature is its ability to make a slideshow out of any set of images and accompany it with a sound file while the slideshow plays, although the application doesn't hide the menu bar while playing a slide show, which is a little disappointing.

In the medium term, Shoobox will also be used as an interface to access Kodak Picture Exchange, a dial-in image database Kodak is establishing to act as an intermediary between image owners and image buyers. And the company is also planning to use it as the interface for its larger image library systems, which will include a system that uses a CD jukebox. Both these systems will be appropriate for large image owners, like picture libraries. Kodak is saying to them that they can use Shoobox and Photo CD now to start cataloguing their collections, and then upgrade to large industrial-strength systems when they become available.

All of this is in the future, though. The database doesn't allow you to design your own screen displays and lacks calculation fields. And its user interface is inconsistent and clumsy. While Shoobox can handle almost anything you are likely to ask of an image database, it is full of annoying imperfections that show Kodak's lack of experience in developing shrink-wrapped software.

Tim Carrigan

About Shoobox 1.0



Pros Supports Photo CD as well as a wide range of other graphic files formats • Has user-definable fields

Cons Poor user interface

Manufacturer Kodak

Price Introductory price £99.95; normal price £269.95

Requires 4M; Photo CD-compatible CD-ROM drive

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CAD/CAM

Virtus Walkthrough 1.1.3

A 3D modelling and viewing program which offers easy navigation.



For virtual realists, the ability to create a model from any kind of 3D information and watch it move effortlessly around colour-rendered views in realtime is little more than a dream. But Virtus claims to offer a version of this dream with Virtus Walkthrough, a 3D modelling and viewing environment.

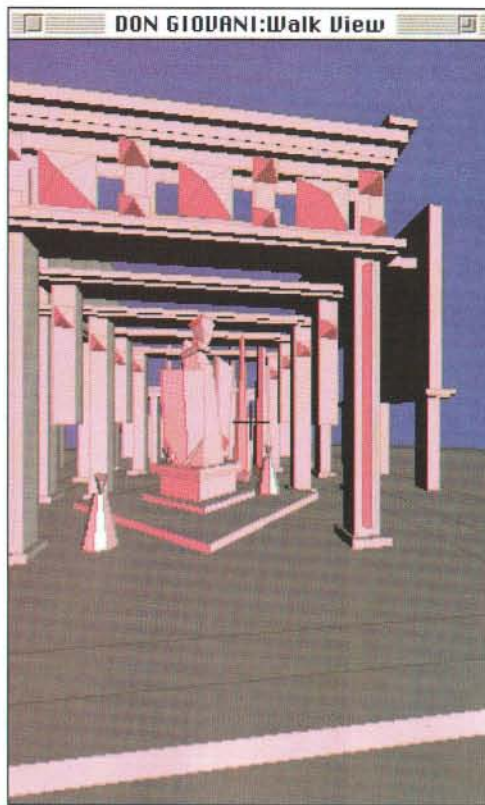
The program consists of a design view, where all the modelling and object creation is done, and a walk view, which is solely used for viewing.

The two exist side by side: draw an object in the 2D design view, and it appears instantly in the walk view, rendered in 3D.

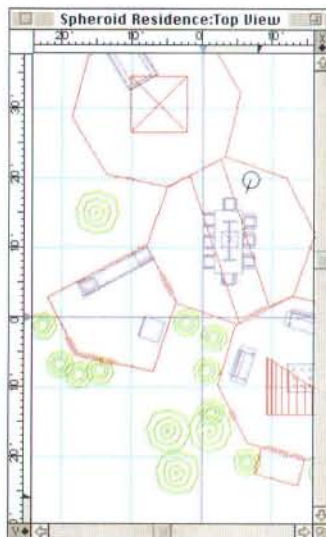
The design view works as a simple 3D modeller, offering tools which are all based on extrusion, which involves taking a 2D shape and dragging it into 3D space to give it its third dimension. Some shapes, however, are difficult to create with an extrusion tool, so the program's developer, Virtus, has come up with an idea known as 'inflation modifiers'.

Basically, these tools extrude objects with an edge profile, to form shapes that do not have straight sides. For example, draw a circle, choose the spherical inflator, and you get a sphere. It's that easy. This approach is unique, and means that you never need to work with more than a 2D view for modelling. There are no freeform surfaces, but the reason for this becomes apparent when you use the walk view – objects need to be kept simple.

The modelling tools available are straightforward. You can draw circles and a variety of polygons, all of which can be extruded with a range of inflators. The inflators allow you to build blocks, pyramids, spheres,



In walk view, clicking the mouse allows you to navigate the 3D model.



Design view offers simple 2D drawing to be extruded into 3D.

roids, and hemispheres, and since every object must have an inside and an outside, creating a shape doesn't involve one single straight line.

The controls for modelling are basic: you can set grids to snap to, and work in a range of units and view orientations. As you draw, objects appear in the walk view, which updates immediately an object is added, even if it is outside the current view area.

Some neat touches are the program's ability to make the adjoining surfaces of two objects transparent to allow for

the construction of more complex shapes, and make objects translucent to act as windows.

Having created a model, you click in the walk view and the tool bar changes to a slider so you can alter the angle of the camera lens, which is used to view the moving object.

The model is seen as a flat-shaded, colour perspective with a cross at its centre. This is the key to navigating the Virtus world. Clicking the mouse in the walk view allows you to move around in 3D space. Click above the cross, for example, and you move forward. Click below it, and you move back. In all cases, the farther you move from the cross, the faster you travel around. Simply holding down the mouse and dragging it around allows you to freely navigate in one plane. In addition, there are various key commands available that allow you to pan or roll the camera in any direction, effectively giving a complete range of movement in all directions.

It takes a while to master, but once you've learnt how to work the controls, navigating around a small model is fun and fast. Walkthrough also offers a useful facility to save a walk path and replay it later. Alternatively, you can save it

to a QuickTime movie, and models can be distributed with Voyager to allow clients, or others working on a project, to either follow a stored path or freely navigate themselves.

The system works fine with small models, but as soon as a larger model is built, it falls apart. Moving around a bigger object defies the limits of the technology. The rendering slows to a snail's pace and the navigation becomes unbearably unresponsive and jumpy. Realistically, the walk view becomes useless, and you are left with a very poor modeller.

The program offers the ability to import 3D DXF information, but these files tend to be very large to start with. As soon as you import one in Walkthrough, there's not much you can do except lurch from one side of it to the other, and wait for the screen to render.

Unfortunately, there's very little to applaud in Virtus Walkthrough. The technology simply does not exist yet to make realtime 3D animation possible on desktop computers.

It's hard to see where the future lies for Virtus Walkthrough. The modelling environment is poor, and its realtime navigation is simply not up to the job. If you only work on lean-tos, or want to test basic spatial configurations, then Virtus may fulfil your needs. But for something more complex, it's best to invest in Infini-D, Upfront or Presenter Pro. You might still have to wait to see the results using these, but at least they will be worth having.

Mark Wilson

About

Virtus Walkthrough 1.1.3



Pros Interesting inflation modifier idea • Well thought-out navigation

Cons Poor performance • Weak modelling

Manufacturer Virtus

Price £410 (single-user version)

Requires 4M RAM

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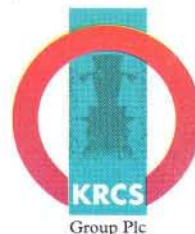
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UTILITIES

AutoRoute Express

A journey planner which calculates the fastest or shortest routes between places in the UK.



AutoRoute Express is designed to help with the planning of road journeys. By consulting a comprehensive road atlas, it produces a variety of routes between locations in the UK. Maps are also available for other countries in Europe and North America.

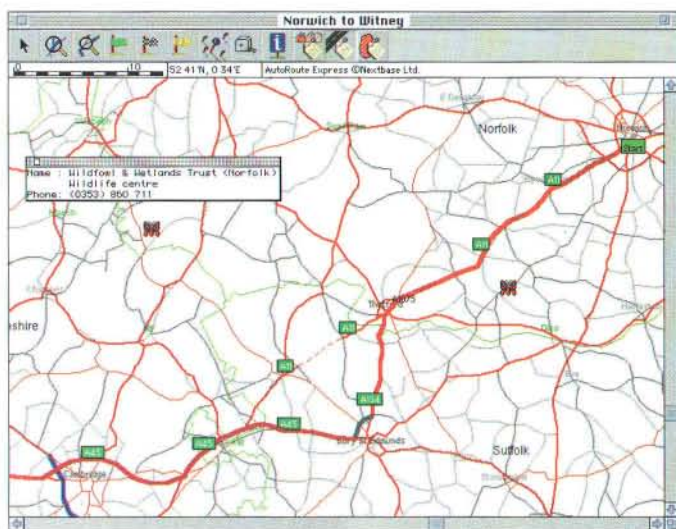
You can select any two places in England, Scotland, Wales or Ireland, for example, and up to four additional sites you want to go through on the way, and AutoRoute will automatically calculate the different routes between them.

AutoRoute distinguishes between urban roads and roads in other locations, so you can ask it to calculate either the shortest or the fastest route to your destination.

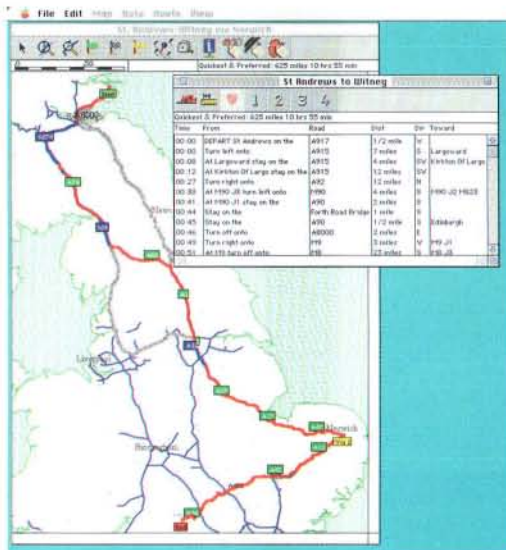
A fastest route can be calculated on the basis of speeds the user thinks they can average on the various classes of roads. To calculate the shortest route, though, it may go via any class of road. In both cases, average speeds can be set for normal driving conditions and for slow conditions, such as congestion or contra-flows.

It is also possible to state preferences for specific roads, ferry crossings, and whether you are prepared to take an alternative route. AutoRoute then decides the best route on the basis of your preferences. In addition, it produces up to four alternative routes, based on similar journey times to the fastest route.

While the purpose of AutoRoute is obvious, its interface is not. When the program opens, a map of the British Isles appears, with various tool buttons displayed at the top of the window. You can zoom in on a particular site using the zoom tool, select where you



Wildlife parks between Norwich and Witney are marked with butterflies and appropriate contact details appear in an information window.



St Andrews to Witney in Oxfordshire via Norwich: details about the route appear in table form, showing the best time to use certain roads.

want your journey to begin using the Start tool and choose the destination using the End tool. Also, there's a Via tool for picking out specific locations you want to travel through.

Unfortunately, there is no Balloon Help on any of these tools, but there is on some of the menu entries. It's much easier to locate the Set Details dialog from the main menu and enter the information manually. In any case, even if you do use the tools, you still need to go through the Set Details process as it is only possible to set road preferences and average speeds from it.

Once all the relevant details have been entered, AutoRoute gets to work and the map of the British Isles is scaled to show the route that has been calculated. The level of detail on the map can be

varied. For example, you can ask for all roads, place names, and landmarks like railway stations to be shown, and even information about possible interesting days out in certain regions, such as wildlife parks. However, the more details selected, the longer the screen takes to redraw.

Having obtained a route, it's possible to refine it. Using various tools, you can edit the attributes of a particular section of road. For example, you can alter the urban or slow attributes of the section, and the program will then take this into account when asked to recalculate the route. Also, the program can be told to avoid certain stretches, which is obviously useful if, say, you know prior to starting out that there are roadworks on a particular road. Here, the lack of a proper save facility causes more problems, though. If a

section of a road's attributes are changed, the program remembers this and it's possible to clear all avoided roads, but you can't list which roads are currently being avoided – the avoided section must be found by sight.

All route directions and instructions appear in table form on screen, containing information about which roads to take and the best times to use them. But the instructions are based on elapsed time, rather than distance, which would have been much easier to follow.

You can copy both the contents of the map window and the route window onto the Clipboard, but in either case the result is a picture. And if you want to paste the table into a spreadsheet, having an image of a table is next to useless. You can paste the table into a word processor, but this isn't much better if the table extends to more than a page. Also, having worked out a route, it's not possible to save it. There is a save menu facility, but all this does is save the current state of the map window without the route information, and it doesn't even manage this properly, performing a different action from the one described in the manual.

The underlying route calculation part of AutoRoute seems accurate. However, the facilities provided by the application and its interface devalue this, and its manual is badly organised and badly indexed.

Simon Brock and Greg Newton-Ingham

About AutoRoute Express



- Pros** Extensive route calculation • Large amount of information available
- Cons** Badly thought-out interface • Lack of proper save and export facilities

Manufacturer NextBase

Price £149.95

Requires Any Mac; 2M of free memory; System 6.0.7

UK distributor NextBase 0784 421422

SCIENCE

MathType 3.0

An easy-to-use equation editor with powerful features.



For scientists, engineers or economists, it's difficult to include complex mathematical equations in papers or reports. Drawing packages can be used to create characters, but the results are often far from professional.

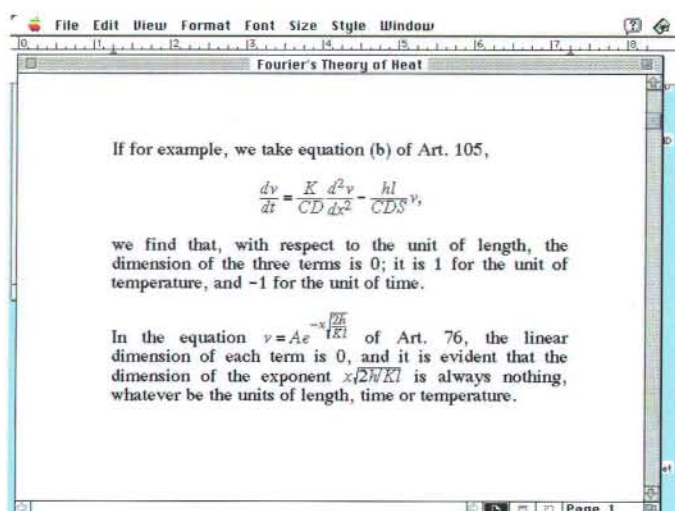
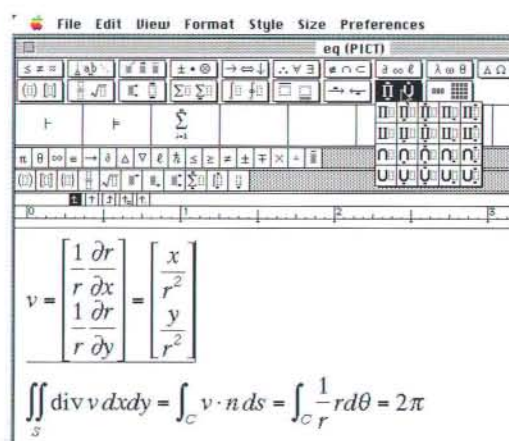
Because of the use of unconventional characters (such as \leq (less than or equal to), ∞ (infinity), Σ (sum) or \int (integral), technical typesetting is difficult. It requires an in-depth knowledge of size, style and position of items that make up an equation, in addition to the structure of equations, involving limits of series or integrals, subscripts, fractions, items within square root signs and so on.

This is where MathType comes in. Its aim is to allow the user to create complex mathematical symbols easily to appear as though they have been typeset by a technical expert.

MathType comes with Times plain and italic bit-mapped fonts, in sizes not normally provided with the Mac. There's also an extra font, MT Extra, which must be installed before you start using the program, and an improved version of Symbol. Although the Symbol and MT Extra fonts together provide the 158 mathematical symbols available in MathType, certain specialist areas may not be covered. However, Adobe offers a font set called Mathematical Pi, which includes hundreds of characters, accessed from inside MathType.

The program arrives on floppy disk, so installation is simply a case of dragging the application onto your hard disk. Once open, you're presented with a window for entering equations, above which are five rows of tools for creating mathematical characters.

The top row of tools contains several buttons which re-



MathType can be used with a range of word processors, including WriteNow, to produce in-line as well as standalone equations.

veal pop-up palettes of related symbols, like inequalities, mathematical operators, set theory symbols, and lower- and upper-case Greek letters. Select an item on a palette, and it's automatically pasted into the equation under construction.

Clicking one of the buttons on the second row produces a palette of templates. There are 199 in all and each one contains a collection of symbols and empty slots, organised and formatted, to help you form a specific structure. They can be used to create fractions, subscripts and subscripts, summation and integrals, matrices, and so on. Once you have pasted a particular template into your equation, you then fill in the slots with letters from the alphabet, numbers, special characters or add further templates.

The third row of tools contains spaces for users to enter macro expressions that they have built up from the MathType symbols and templates. These would normally be commonly-used equation frag-

ments, such as the sum from 1 to n . I constructed the logic symbol for provability (like a T on its side) out of a vertical bar and a hyphen (nudged to the left), and installed that in the macro bar.

The fourth and fifth rows of buttons allow you to save a personal selection of regularly used sub-sets of symbols and templates, as well as extra characters imported from other fonts available on the machine.

One of MathType's particular virtues is its understanding of the rules of technical typesetting. You don't have to worry about the size of characters or of spaces – in fact, you don't enter spaces yourself. MathType recognises common function names and makes sure they are in a plain font. At any time, though, you can override any of its decisions.

With Word 5.0, PageMaker 5.0 and Excel 4.0, you can use the host program's Object Embedding facility to launch MathType, and create and insert an equation into a docu-

ment. To modify the equation, you double-click on it to automatically relaunch MathType. Alternatively, you can launch MathType from within the Finder, produce an equation and then transfer it via the Clipboard to a word processing document. Also, it can be saved as a PICT or EPS file, and then imported into a DTP document or saved in the form of TEX code, and used in conjunction with one of the TEX typesetting packages. In all cases, the equation can be returned to MathType for further editing.

You can also import equations to sit level within a line of text. If you are using MacWrite Pro or XPress, the equation has to be treated as a subscript and manually adjusted to its baseline position. However, Claris is currently looking into the problem and a maintenance upgrade to MacWrite Pro is imminent.

Word 5.0 comes with a cut-down version of MathType, in the form of an applet called Equation Editor, which produces the same quality results. But only the full application offers the convenience of the custom symbol and template bars, macro expressions, the TEX interface, and the ability to save in PICT and EPS files.

On the whole, MathType is a first class program which produces topnotch results with the minimum of effort on the part of the user.

Frank Kriwaczek

About

MathType 3.0



- Pros**
- Intuitive interface •
 - Professional quality results •
 - Built-in knowledge of maths typesetting conventions •
 - Works well with most word processing applications

- Cons**
- Installing fonts for use with MathType can be a bit of a trial, particularly when Suitcase and ATM are involved

Manufacturer	Design Science
Price	£179; Word 5.0 Equation Editor upgrade £89
Requires	System 7; 700K hard disk space; 512K RAM; 32-bit QuickDraw.
UK distributor	AM Micro 0392 426473

GRAPHICS: DRAW

Tree 1.0

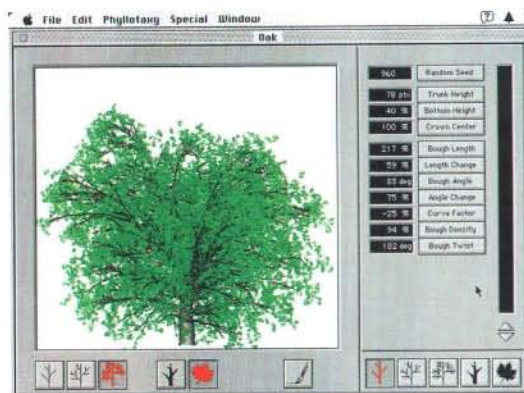
A package for generating realistic images of trees.



Creating trees on a Mac has always been a problem.

You have to either draw them in a paint program or, if you're using them in a 3D model, construct them as geometric objects. The results never look natural, and adding trees to a 3D model complicates it, so it takes much longer to render.

Onyx's Tree, a program for generating realistic images of trees takes a different approach. It uses a series of parameters to create different looks for a species of tree.



Tree gives impressive results. The parameters down the right-hand side change the look of a particular species of tree.

On launching the program, the daunting array of parameters allow you to change trunk height, bough angle, random seed, twig twist, among other features. Thankfully, there are a good set of example trees to get you started. You don't actually draw the tree yourself; you simply click on buttons that give you a basic skeleton and then alter the parameters until you get the result you want.

Starting from scratch is quite difficult, unless you're into creating specific tree types, and a tree is created as a side view only – you can't move the viewing position.

It's best to get the shape of the tree right as a skeleton first as adding thickness to the trunk and branches as well as showing the leaves can greatly increase the redraw time. The manual does explain each of the parameters in detail, but you need to play around quite a

bit to get the hang of them. One odd quirk is that the branches and the trunk are a metallic grey – you can't change them to brown – which is fine for a silver birch but other trees such as a poplar or an oak look a little strange, particularly if you don't want the leaves on it.

Leaves are added at the touch of a button and this does make the tree remarkably realistic. You can change the colours of the leaves to suit a particular type of tree or to represent different seasons. Setting the colours isn't very intuitive, as the standard Mac colour wheel isn't used. Instead, you have Add Red and Add Blue buttons, and it takes some experimenting to get the right colour.

The image of a tree can be saved as a PICT file, but doesn't

CONNECTIVITY

cc:Mail Remote 2.0

An easy-to-use email system for storing and receiving messages on the road.



Lotus' cc:Mail Remote is designed specifically for PowerBook users

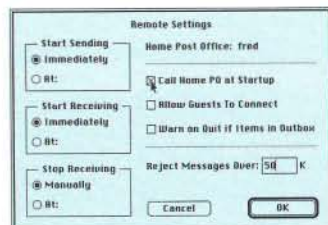
who need to send or receive mail while on the road or away from their office.

The program is based on the central idea of a 'post office'. Every cc:Mail user has a local post office on their own hard disk, which stores any messages sent to or from that particular machine. When you use a modem to connect the PowerBook to your office network, your own post office connects with the main cc:Mail Router that controls the distribution of mail among all the individual post offices on the network.

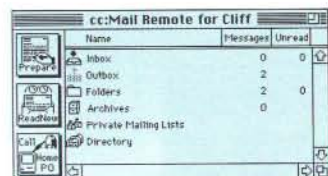
Because PowerBook users may be out of contact with the main network, cc:Mail Remote can be configured so that it sends mail automatically when the program starts up, or only at the times you specify. To save running up a huge phone bill, the program allows you to store directories of individual names or groups of people. This means that you can send a message to the group 'sales managers', for instance, rather than having to send it to each group member individually.

If you've got a particularly large directory, finding a specific name is easy using cc:Mail Remote's search facility. Ask the program to search for the first three characters of the name and it presents you with a list of contacts which begin in the same way, rather like the search in QuickDex.

For users who need to have contact with more than one site or network, there is an option to store telephone numbers and communication settings for each one individually. You connect to a site simply by selecting it from the directory with the mouse. And it's not



You can store messages in cc:Mail Remote and configure the program to send all messages automatically as soon as you next log in to your remote network.



The cc:Mail Remote 'post office' stores all incoming and out-going mail, as well as lists of other users' email addresses in the directory.

necessary for the network on the other end to be a cc:Mail network, as there is an optional Link program that allows you to exchange mail with Novell, MCI Mail or AT&T EasyLink mail systems.

Files such as graphics or spreadsheets can be added to messages, and if you are on a mixed PC/Mac network, the program allows your PowerBook to recognise DOS or Windows files in the same way that Macintosh PC Exchange does, though, like PC Exchange, it does not convert files into a Mac format.

cc: Mail Remote is simple to use, thanks to a series of icons that allows instant access to the main mail commands, and it even comes complete with its own modem cable – how's that for attention to detail?

Cliff Joseph

About

Tree 1.0



Pros Creates realistic tree images

Cons Restricted to side view only

Manufacturer Onyx

Price £354 (Education £277)

Requires Any Mac (co-processor and non-co-processor versions available); 13in colour monitor

UK distributor Gomark
071 731 7930

About

cc:Mail Remote 2.0



Pros Easy-to-use email system • Can store connection settings for multiple network sites

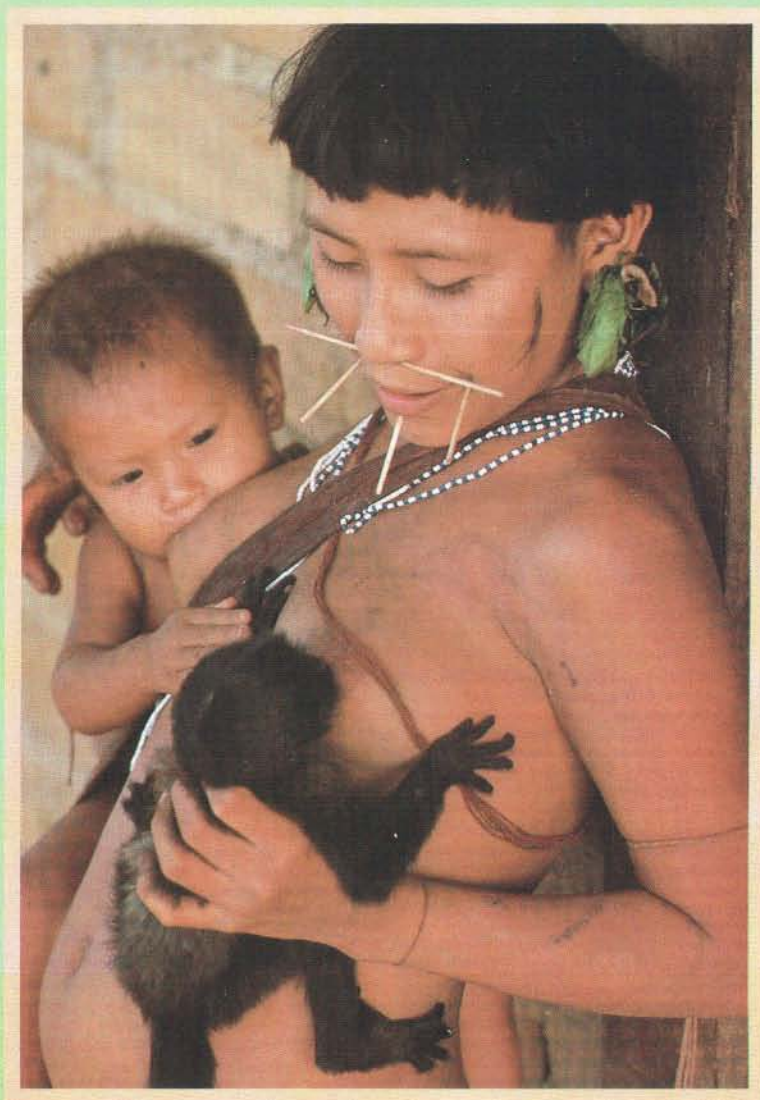
Cons Expensive

Manufacturer Three-Sixty

Price £215

Requires Any PowerBook

UK distributor Lotus 0753 532044



THE UNEXPECTED

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DISPLAY

MicroTouch Mac 'n' Touch

A touch screen which fits a wide range of monitor sizes.



As multimedia applications become more established, the demand for specialised kit which allows the Mac to be controlled easily is increasing.

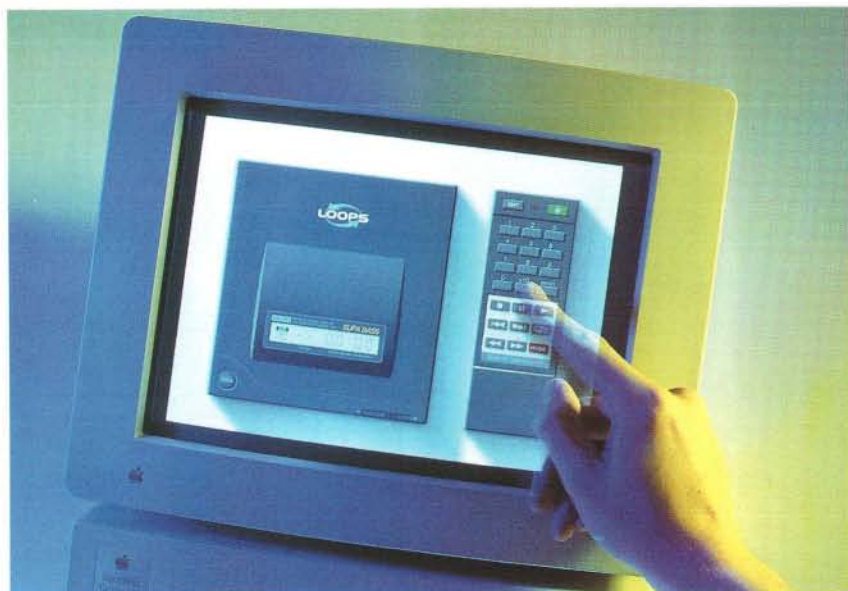
MicroTouch's Mac 'n' Touch is aimed particularly at pro-

The whole installation is inside the monitor's case, and the only difference you'll notice is a socket at the back of the case which connects the screen into the ADB port. If your Mac has two ADB ports, there's no problem connecting the keyboard, mouse and touch-screen as well. But if you use an LC, which has only one ADB port, you'll need an adaptor so the keyboard and mouse can be plugged in along with the touch screen. Other than that, the monitor connects normally to the video card or built-in video, and MicroTouch will upgrade your existing monitor

to the other modes, except if you want to select-drag and highlight – you hold your finger on the screen and drag, rather than having to select and touch the screen again. For general mouse-like use, this is the easiest mode to work in. Normal Finder operations are difficult to do with your finger, but the screen isn't really designed for that.

Overall, the Mac 'n' Touch worked very well. The only problem was that our screen had an optional anti-reflective coating, which was great at cutting out reflections but interfered slightly with the Trinitron tube's shadow mask

With Mac 'n' Touch, you can control the computer by touching the screen to initiate actions.



grams that require screen-pointing using your finger, rather than finer control using a stylus. This kind of approach is useful for educational purposes, using Apple's At Ease interface, say, or in a point-of-information system where the user can interact with the program without having to use a keyboard or a mouse.

The Mac 'n' Touch uses a capacitive sensor rather than pressure, which means it will only work with your finger rather than a plastic stylus, for instance. However, a special stylus which has the same capacitive effect as human flesh will be available soon from MicroTouch for around £15.

The monitor we used for this review was the now-discontinued Apple Colour 13in, but MicroTouch says it can install the touch-sensitive screen to monitors with display sizes ranging from 9in to 21in.

or supply a new one with Mac 'n' Touch already installed.

The driver software includes a control panel, which lets you calibrate the screen by simply touching the four corners of it. The preference controls allow you to set the cursor offset, so you can determine its distance from the end of your fingertip, and choose how the screen responds to taps: for example, whether an application opens with one tap or two.

The Liftoff mode operates in the same way as a mouse button: keeping your finger on the screen holds the button down, while taking your finger off it registers a click. In Tap mode, you keep your finger on the screen to drag objects and pull down menus, but take your finger off and tap the screen again to perform mouse clicks.

The Drag mode is similar

wires, which produced a slight shimmering on the screen. But, if you are going to use Mac 'n' Touch as a multimedia front end, where people aren't going to stare at it for hours, then this shouldn't be a problem.

Nigel Grey

About

MicroTouch Mac 'n' Touch



Pros Easy to install and use • Wide range of screen sizes

Cons Anti-glare coating interferes slightly with shadow mask wires

Manufacturer MicroTouch

Price Upgrade for 9in to 17in screens £918; 17in to 21in screens £968; 14in monitor with touch-sensitive screen £1395

Requires Any Mac

UK distributor MicroTouch 0844 260123

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IND Ltd,
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Essex

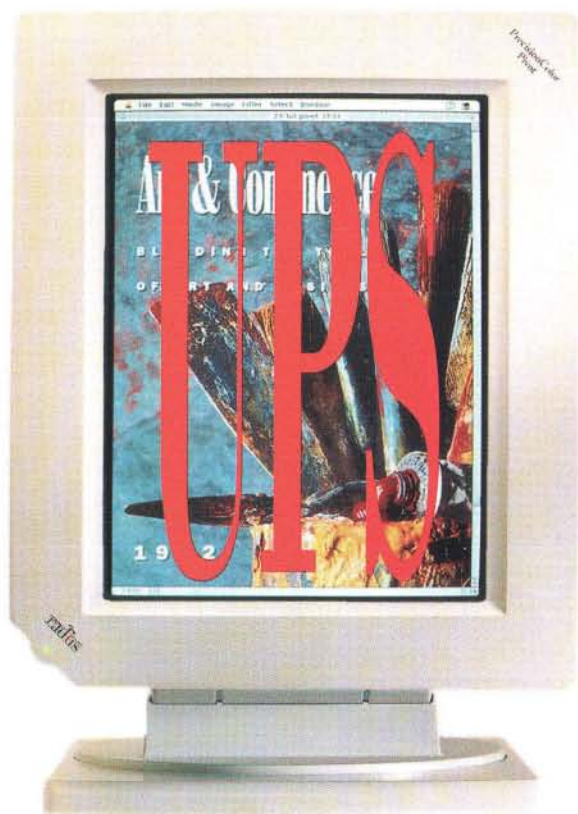
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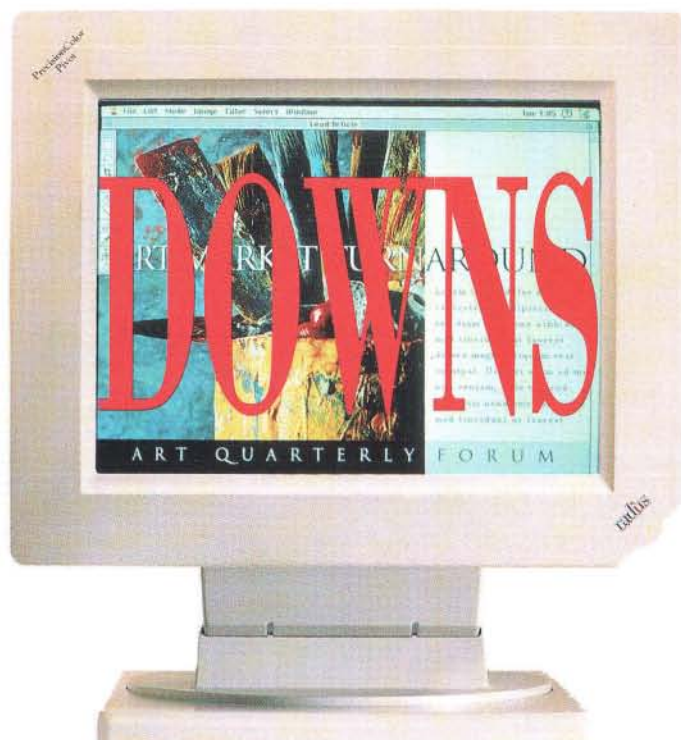
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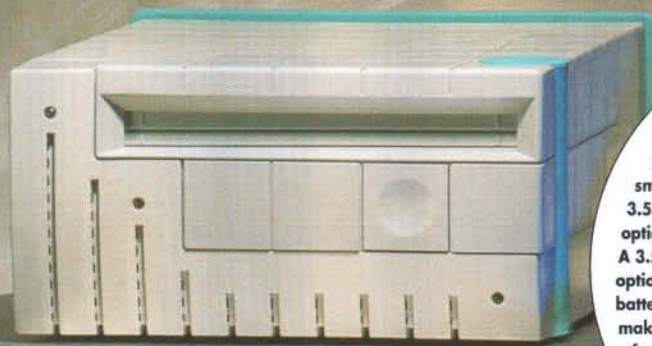
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Brief Encounters

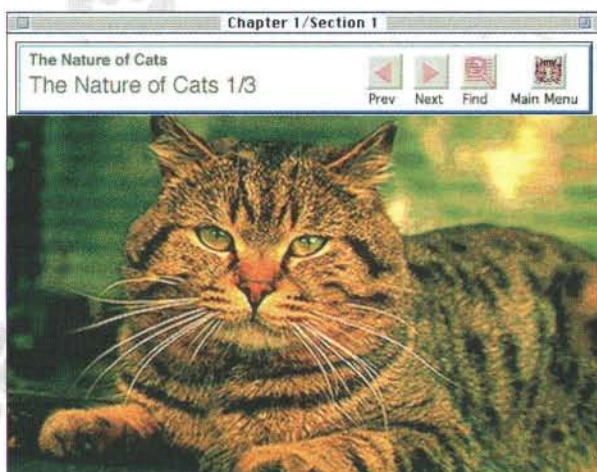
Weight-watcher **Tony Tyler** gets physical about QuickTime, has a slow-motion feline encounter and plays around with a Thingy.

The Cats



Orthodox publications about cats are thick on the ground, good sellers in the main, and it was only a matter of time before somebody transferred this enticing subject matter to CD-ROM. Here it's been done in a pleasant and entirely orthodox manner – still frames, occasional movie clips, animated sequences – with an undemanding wodge of text alongside. The origins of the cat, how to choose a cat, what to do when your cat falls sick, are all covered in a competent, if not exactly encyclopaedic, way. But the main reason for the product's existence is, of course, cat pictures. And if you enjoy looking at these, and marvelling at the almost unearthly beauty of these creatures, you'll enjoy this British-developed CD. In one respect only is *The Cats* a dog: it's as slow as treacle in Alaska.

£34
Softline
081 401 1234



Slow as treacle in Alaska but an interesting CD-ROM nevertheless.

Exerciser



RSI wrecks lives! Computing is a health hazard! All perfectly true, no doubt, and here to put matters right are the Swedes with a beautifully-engineered, immaculate program designed to help you keep in trim while slaving away at a hot VDU. First, set the timer. When it goes off, open Exerciser. You are confronted by a QuickTimed young lady demonstrating exercises. Emulate her. That's it – swing those elbows wide! Ignore the titters and ribald cries from around the room. Grit your teeth and carry on – it's your RSI, after all. Feel better? Now – back to work! But don't (the manual advises) let this excellent, program persuade you to avoid regular sessions with your physiotherapist. Wouldn't dream of it, chaps. Dana the Dominatrix may only have an Amstrad PCW, but she knows some exercises that would make a fair old QuickTime movie or two in their own right.

£39
Hypermedia Technology
010 46 46
143081



Keeping in trim.

Iron Helix



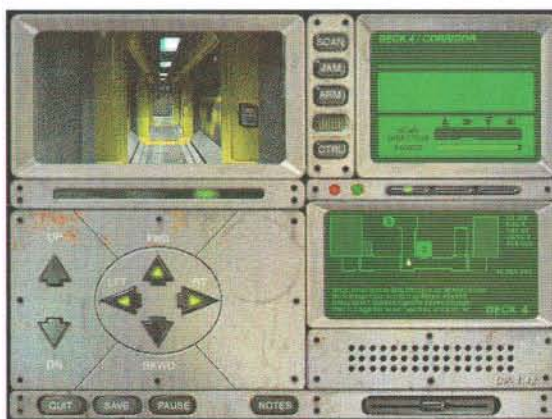
One of the most frightening, and cheap to stage, parts of the movie *Alien*, is the sequence where the skipper has gone down into the *Nostromo's* air-conditioning system to track down and zap (hah!) the Thingy that's been eating them. By using a look-down radar map of the tubing layout, the audience is able to follow both the captain and the Thingy – both represented as blips – and note that the latter is creeping steadily up on the former. It all ends in tears, of course, but it gave the developers of *Iron Helix* the main idea for their game.

Then, presumably realising that this was perhaps less than gripping on its own, they built around it an interface of considerable sumptuousness, very similar to that of *The Journeyman Project* – a control panel, a small screen where the visual action takes place, and on another screen the look-down map of the ship showing you and the Thingy – in this

case, a robot destroyer automatically programmed to hunt you down. The game is several orders of magnitude faster than *Journeyman*, the interface is one of the prettiest I've ever seen, the rendered graphics are superb, the plotline

is at least adequate... so why did I find the cold tendrils of ennui creeping across my skull? Why don't they show us the Thingy in full-motion PICS format? How green is my valley? The answers to these and other questions may be found on Ceefax, page 94.

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An Immature Approach

We object to the contents and the approach of Tony Tyler's Wiz Tools review (Brief Encounters, Vol 9 No 9, 30 April 1993, p37).

The article is not objective. The journalist admits that he did not even look at the product because he experienced problems at start-up, problems which may not be caused by Wiz Tools. It is only fair to contact us or Principal Distribution, our distributor, if an incompatibility problem arises. Since its launch in February 1993, no other user has experienced a similar problem.

Tony Tyler's advice to readers to incinerate the software because of a start-up problem is not a very mature approach. We would like to know what caused the crash and how we can solve it.

In the meantime, Wiz Tools 1.1 is about to ship, and we would appreciate a review of it.

**Oliver Mérenne, managing
director, Highware, California, US**

Tony Tyler, reviewer, replies:
When software behaves as disturbingly as Wiz Tools did at start-up, it is my invariable policy not to give it any chance whatsoever to cause greater damage – which is why I instantly removed it from my hard disk. I did not advise incineration; that was a pleasure I reserved for myself.

I am delighted to hear that there is a 1.1 version – some bug fixes, perhaps. There is never any point contacting UK distributors of software or even developers because when INIT clashes or other odd phenomena occur, the only tune that anyone sings is *Some Other Guy Now*.

Software Scandal

Is it really asking too much to expect a product purchased from a reputable dealer to be the latest version?

Richard Spohrer, London, SE25

Peter Jackson replies: It appears so; the standard of software support available in this country is disgraceful. Dealers don't even stock the latest version of a package, let alone inform their customers of upgrades.

I've tried before to promote a simple step that would help put things right – the registration of software at point of sale. After all, the dealer has more contact with software distributors and publishers than the customer does. Dealers should be able to record details of each sale and pass them on, and the original supplier should receive a stack of registrations through the sales channels each week for entry on a central mailshot database. Computers

one particular issue (Vol 9 No 11, 28 May 1993) where the height of all the inserts piled on top of each other was greater than that of the magazine itself.

Working in the PC industry myself, I understand the need to bring your product range, company name and pricing to the awareness of the general public. However, in these days of ecological consciousness, surely it would make more sense for retailers to adopt the approach of "if you would like a catalogue, please fill in and return the reply paid card" rather than simply lumping the entire catalogue in with the magazine. If nothing else, the cost of production would be greatly reduced and a few more trees would live.

Rory Choudhuri, CompuServe

We take your point about trees – we recycle paper in our office. The trouble is manufacturers print catal-



are good at storing and transferring that sort of information.

Until then, keep an eye on the Mac press to learn of new versions that are released. You certainly shouldn't rely on software companies, distributors or dealers to inform you, no matter how many registration cards you've filled in.

Saving Trees

As a subscriber to MacUser, I have got used to receiving my copy, opening the plastic wrapper and having inserts and leaflets fall to the floor. However, I must comment on

ogues to distribute – if they didn't do it through MacUser they would send them out themselves, adding yet another layer of packaging. Ed

SE Revamped

After reading your excellent article on upgrading older Macs (Vol 9 No 10, 14 May 1993, p47), I decided to revamp my old SE. It has been a humbling experience. I have called every advertiser in MacUser and each offered me only one type of accelerator. I specified a 25MHz clock rate, the ability to fit extra RAM and access virtual memory.

I have been told the Novy 30 requires no extra software to access virtual memory under System 7 and then that it needs Compact Virtual 3.2 costing £50. I was offered a Daystar 06040 card – easy to fit – then told it needs an adaptor. The list goes on...

Finally on ringing Frontline for some information, I was told that technical support is for dealers only and to speak to my supplier, and the phone was put down on me. I wrote to the managing director to complain but had no reply. I wanted to buy, I had the cash but they did their darndest to stop me. I bought a Hoover in the end.

Harry Seaford, Kent

Frontline Distribution replies:
We apologise most sincerely to Mr Seaford. Although we are a trade-only distributor, we do receive calls from users and we are always happy to provide them with product information, pricing and their local reseller. Mr Seaford's experience was an exceptional occurrence and one that we deeply regret. Our normal complaints procedure is rigorous and involves an immediate response and phone call from our managing director. Unfortunately the name on Mr Seaford's letter was unreadable, and his phone number couldn't be traced. Steps have been taken to ensure that this does not happen again. Frontline's Apple division operates a dedicated hotline for all product enquiries on 0256 20534.

Secret Competitions

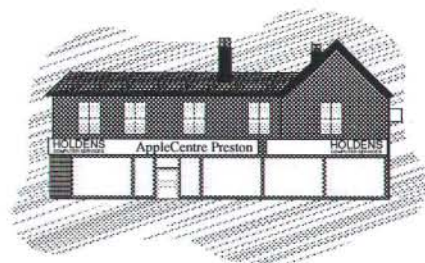
Is there any particular reason why MacUser doesn't let the public know who wins its competitions? I would assume that thousands of readers, including myself, have entered them every fortnight for the last six months or more, and never get a name in any corner of the magazine.

Alvaro Armas, Stirling

Unfortunately, due to space limitations we are unable to print the majority of winners, but we can assure you there are many happy winners. Check out the Painter/Wacom competition this issue. Ed.



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Hard Labour

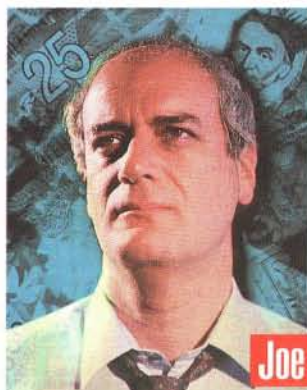
Have you ever wondered why, uniquely in the UK, surgeons don't carry the title 'Doctor' but are called 'Mr', 'Mrs', 'Miss' or 'Ms' instead? The same goes for dentists – everywhere in the world a dentist is a doctor and boasts the appropriate honorific, but in the UK they're just plain old 'Mr/Mrs/Miss/Ms'.

The reason, like so many British aberrations, lies in centuries-old tradition: the surgical and dental professions trace their respective histories back to the days of the military barber/surgeons when every army unit had a barber attached to maintain the troops' hair in a condition compatible with hygiene and martial discipline.

Military minds being what they were (and probably still are), it naturally followed that if a chap was handy with a pair of scissors, he'd be equally nifty with a scalpel, bone-saw or forceps – after all, trimming off a bit round the sides can't be all that different from slicing off the odd leg or two or yanking out the occasional molar. So, the barbers, treating injuries through the simple expedient of removing a likely body part, evolved into specialist surgeons and dentists. But their original status as tradesmen stuck, confining them to a plain person's title, whereas the appellation 'Doctor' was reserved solely for those who had ascended to the honourable profession of poisoning the sick with chemicals.

You see, it's all a question of 'skill sets': to the institutional mind – and most of us have at least semi-institutionalised minds – if you work primarily with your hands, you're socially inferior to those whose work is perceived as more cerebral. Thus, engineers are less highly regarded (and paid) than lawyers, even though it's the engineers who make life on this planet bearable and it's the lawyers who don't.

Similarly, the divas of the information technology stage are those who write the software, while those who design and build the machines for the software to run on are merely the spear-carriers. And if you doubt that, just think how many software



Joe Sudworts

people have achieved celebrity status and how many hardware designers: in the world of the Mac, names such as Bill Atkinson (creator of MacPaint and HyperCard) and Andy Hertzfeld (the QuickDraw element of the Mac operating system and Switcher, MultiFinder's precursor), are pretty well-known, but who can name even one member of the team that put the original Mac hardware together?

In the wider sphere, Ted Codd, for example, is legendary for having laid down the rules for relational databases, Bill Gates made his billions out of software, but who was responsible for realising the IBM PC, the machine that, more than any other, brought about the desktop computing revolution?

This overwhelming emphasis on software tends to work to the detriment of the computer user. Because the component

result is state-of-the-art software running on obsolescent hardware, with the user getting the worst of all possible worlds: neither the hardware nor the software are ever even close to extracting the optimum performance from the other.

Apple's recent efforts to turn the Mac into a consumer commodity have been a movement in the right direction – cheap(ish) and relatively disposable hardware for all – but a half-baked one, nonetheless. The present deluge of Quadras, Ilvxs, Centrises and Performas offers little, apart from marginal increases in processing speed (and noticeably lower-quality construction), that hasn't been present in the Mac line for several years already – unless, of course, you consider a built-in CD-ROM to be a blinding technical innovation. Even the Duos, clever little devices that they undoubtedly are, are adaptations of old, rather than an intro-

Engineers are less highly regarded than lawyers, even though it's the engineers who make life bearable and it's the lawyers who don't.

costs, development costs and lead times for hardware are so much greater than for software, and because software is therefore relatively inexpensive to produce and buy, it's only natural that it should benefit from more rapid evolution in the hands of the manufacturer and the user. You may think twice about forking out £75 to upgrade your copy of MacWrite, but you'll think 10 times or more before handing over a couple of thousand to upgrade your Mac. The net

duction of new, technology. And they're all still far too expensive.

We're told that the PowerPCs, due next year, will constitute the next great leap forward. But a great leap forward into what? Another cycle of outrageously overpriced hardware trying and failing to play catch up with the software? I fear so. Without putting too fine a point on it, the whole hardware development process is well overdue for a radical re-think. ☞

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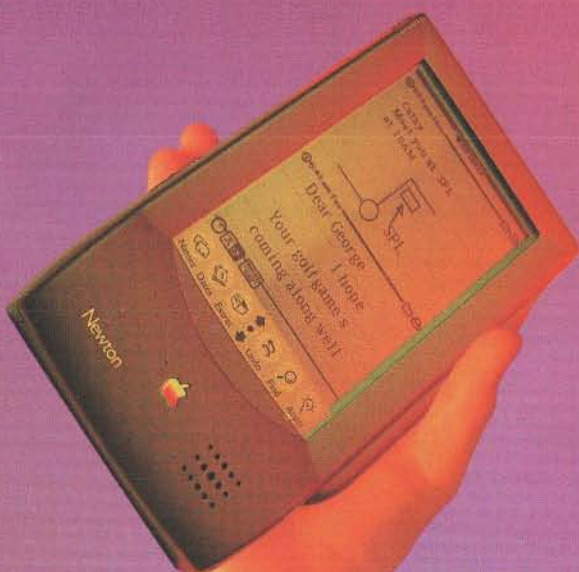
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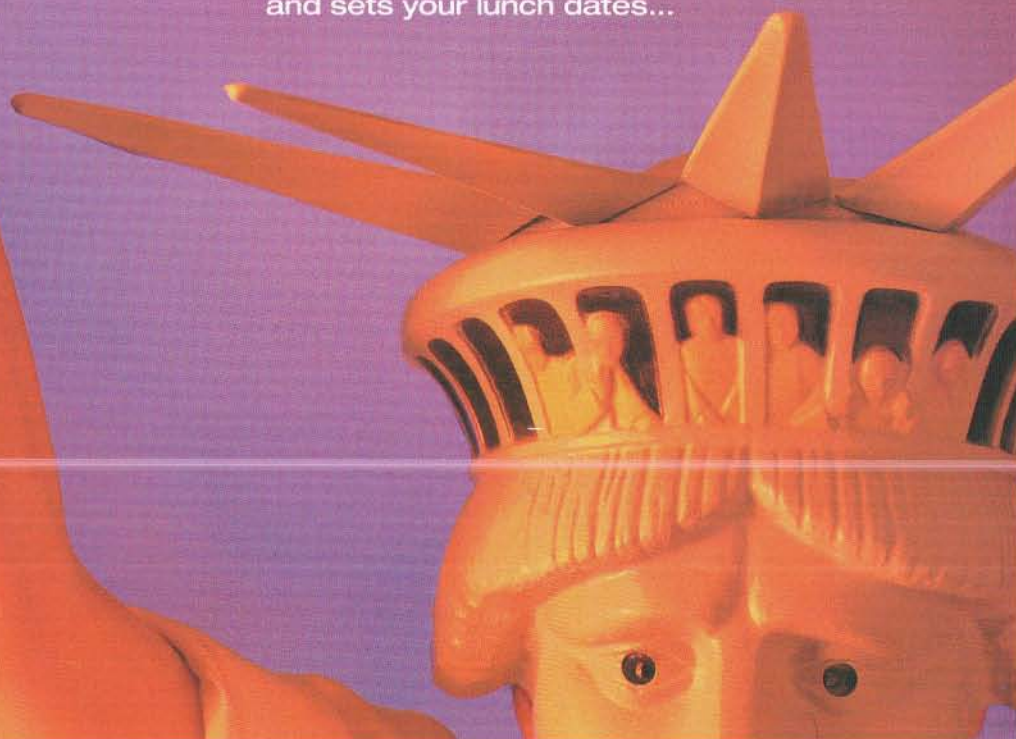
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Hand It Over!



Welcome to the New World.

Newton technology has finally got real with MessagePad, a pocket-sized organiser which recognises your handwriting, understands your commands, and sets your lunch dates...



If Newton was in court, Apple would be justified in ordering a retrial because the hype has been enormous. On the other hand, much of it has emanated from Apple itself; the company has been assiduously pushing technology and the notion of PDAs for well over a year, while sniping at every rival announcement along the way. If the final product is a let down, Apple really only has itself to blame.

Luckily, it looks like MessagePad, the Newton product, can deliver. MessagePad has changed from earlier prototypes in some respects – it has, for example, lost its beetle-like hood – and differs

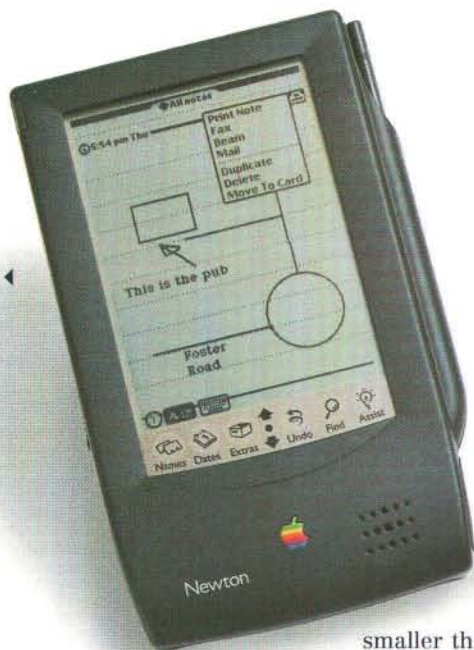
in some important respects from the original specifications. But it's here, it connects to the Mac, it appears to work, and it will be in the shops by the autumn.

The Little Helper's Technology

The basic premise behind MessagePad is that it is a dedicated little helper which employs advanced technology, including handwriting and graphics recognition, to let its owner capture, organise and act upon the flow of disparate information – addresses, appointments, plans, train times – that threaten to engulf our lives. ▶

**By Caroline
Bassett and
Nigel Grey**

Photography by
Julian Hawkins
and montage by
Cymbol



Recognisers allow you to combine text and graphics and move them around on-screen to produce annotated messages, diagrams and notes. You can send them to your friends (or enemies) from within the screen via the pull down menu. Options include beaming via infrared.

And MessagePad can do that any time, anywhere, via sophisticated communications facilities, decent battery power, a nifty new storage technology called PCMCIA, and the fact that, unlike the current generation of portable computers like the PowerBook, you really can keep it in your pocket.

MessagePad is a black tablet, smaller than a spiral bound notebook, at the centre of which is a 336x240 transparent screen. It comes with a passive stylus – you could use your fingernail but it might damage the screen and would be less exact.

There are ports for connecting to the mains, a neat two battery system – alkaline with lithium back up – which includes a lock designed to make it very difficult to power the machine right down and lose your data. At the top rim is a discreet infrared port for “beaming” messages between MessagePads and Sharp Wizards.

Underlying MessagePad are a series of hardware and software architectures collectively known as Newton technology. These handle recognition, information, communications and Newton Intelligent Assistance.

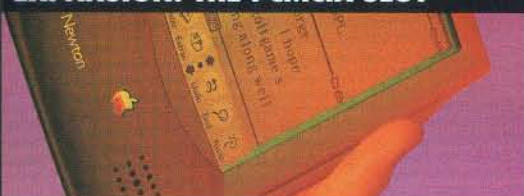
Text and graphical recognisers built in MessagePad are at the heart of text recognition – estimated at well over 90% accurate by early users, who were, admittedly, Apple insiders. Newton’s cursive handwriting recognition uses a built-in dictionary of around 60,000 words, to which it refers each time the user completes a word. This sounds inflexible but because the dictionary is extensible – you can add words as you need them – you can personalise your own vocabulary.

The MessagePad will adapt its recognisers to handle your particular handwriting style – you don’t have to write within boxes – and it will transform your scrawl into neat type, assuming you want it to. Similarly, graphics recognisers can tidy up rough sketches, transforming wobbly circles into symmetrical objects or lines into decipherable arrows.

The Information architecture controls the way in which the MessagePad handles information and the way in which the user can see it. Essentially, it allows for freeform, and forms-based input of data. Holding each scrap of information as a separate unit and labelling this as a type of information means it can be linked, grouped and regrouped as required.

Communications in the MessagePad are based on a universal In/Out box. This is basically, a two-way post box which channels different forms of communication – email and infrared, for example

EXPANSION: THE PCMCIA SLOT



All Newton MessagePads will come with a Personal Computer Memory Card International Association (PCMCIA) expansion slot. The cards which fit in these slots provide access to extra memory, ROM-based software (such as maps), tiny modems and even Ethernet adaptors. PCMCIA cards were designed specifically for palmtop computers and are about the same size as a credit card. The cards come in three types, and, initially, the MessagePads will use the 5mm deep Type II cards. Once it has been plugged into the Newton’s slot, you can access the card using the Extras box. Clicking on the card’s icon opens up extra RAM or software that is stored on it.

Apple already has its own 2M RAM expansion card which will ship at the same time as the MessagePads. Future Newtons could incorporate Type III cards, which are 10.5mm deep and can hold devices such as miniature hard disks, even greater RAM expansion and so on. The PCMCIA format is standard so a RAM card from a PC palmtop should work with the the MessagePad.



A SOFT TOUCH

Apple says 1300 companies are interested in developing programs for Newton devices, with 12 titles promised by the end of the third quarter of this year, 50 by Christmas 1993, and at least 300 by the end of 1994. Titles will be delivered on PCMCIA cards.

NEWTON COPYCATS

The Newton technology is being broadly licensed to companies involved in the computer, telecommunications and consumer electronics industry, including Sharp, Matsushita, Motorola and Siemens, among others. Apple is still looking for new partners to exploit the core technology in different ways. Some of these companies will produce products very like MessagePad, and we can expect a tough price war as the companies slug it out for leadership in the market.

– while integrating with other architectures within the device.

The in/out box also controls communications with Macs and PCs, handled via the Newton Connection Kit. The communications in this first machine are less sophisticated than early plans suggested but Apple points out that the system is scalable, which means different communications types could be built in later.

Newton Intelligence threads across these three architectures and is in many ways the key differentiation between a dumb organiser and the notion of an intelligent assistant. Basically, it means the MessagePad can understand a particular task and apply a function to it. It will, for example, understand that when you write “lunch with Atilla” in your notepad, it probably means an appointment around midday, if that is when you generally have lunch, and it will pull up your diary with the

MESSAGEPAD MARKET

Apple’s research says the average buyer will be a 39-year-old on a \$59,000 income. Some 54% of users will have received higher education, and two-thirds of buyers will be male. Eighty per cent will have homes with children, 32% will never have used computers before, while 55% are likely to be IBM-compatible users – a figure which suggests 13% will be Mac users. Like all market research, these figures should be taken with a ton or two of salt, particularly as they take no account of MessagePad clones.

INSIDE EXTRAS

In Box Where all arriving mail is stored.

Out Box Where all your out-going mail is stored. You can send it one item at a time, or in batches of the same type.

Computer The link to your Mac or PC via the Newton Connection Kit.

Sharp MessagePad can link to Sharp's (rival) PDA.

Card This controls any PCMCIA cards you have installed.

Calculator A basic calculator from which you can cut, copy and paste.

Tables MessagePad provides a series of conversion tables including those for currency exchange, metric conversion, and loan rates.

Keyboard You can access the keyboard from within the Extras box, or from elsewhere in MessagePad.

Styles (Writing styles). The type you want. Actually rather a slim selection, you can choose 9pt, 12pt, or 18pt, plain, bold or underlined text.

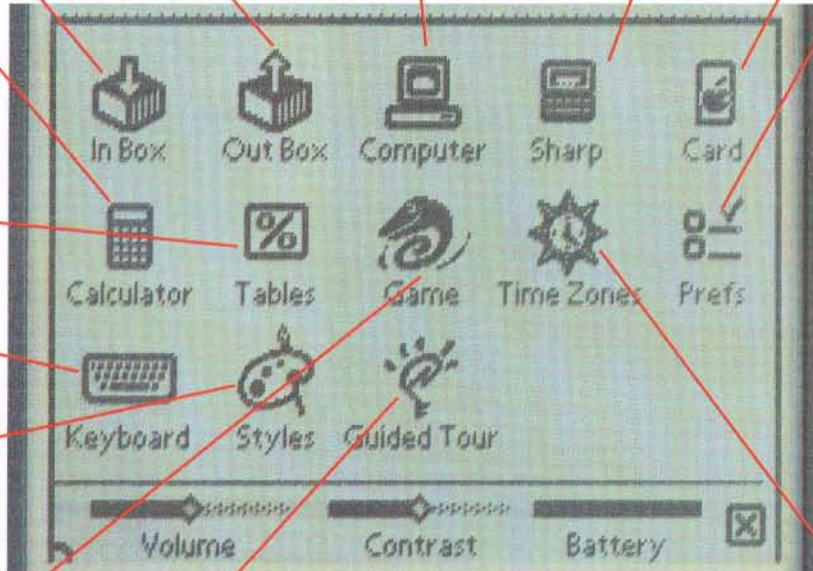
Game Rather unexciting: MessagePad's built-in gridlock word game is good for airport lounges when you've finished *The Secret History* or possibly when gridlocked...

Guided Tour As the name suggests, a guided tour.

Below the line Slider controls for sound volume and screen contrast allow you to adjust visual and aural settings. The battery indicator shows how much power is left in the battery. At the far corner, the X marks close the window in common with all MessagePad windows.

Prefs Short for Preferences. These cover most areas of MessagePad and work in much the same way as they do on the Mac. Preferences are used to fine-tune handwriting recognisers – for example, to adjust the angle of the pen – to choose keyboard type, to format calendars, times and numbers, and to set whether you want to accept incoming beams automatically or whether you want to be prompted. You can also control the sounds MessagePad makes from a dialog within Preferences. These include setting action, alarm and pen sound effects and a volume slide.

Time Zones Find out what time it is in Quito, from London or Rio. More importantly, tell MessagePad where you are. It will act on this information.



BASIC NAVIGATION

The icons around the base of the MessagePad allow you to navigate around different areas.



The Names, Dates and Extras icons cover basic functions, the Undo, Find and Assist icons provide the tools you will need to perform tasks.

appointment marked in for you to confirm or cancel. This intelligence can work within the context of other recognisers – isolating 'lunch' from the phrase "lunch with Atilla", for example, and recognising it as a doing word (in fact, a synonym for a doing word), so that the message can be stored or acted on. Newton has a genuine sense of context – and, incidentally, a sense of national identity: the English Newton will recognise tea as a social occasion, while the US version does not.

The Notepad Activity Area

When you turn MessagePad on you get a screen with the familiar lightbulb logo and space to write in your name and password. MessagePad is intended to be a personal tool, and the password emphasises that from the start – you can change it, but if you forget it, you'll have to refer to your dealer.

Once you're in, it's easy. The metaphor used by MessagePad is very intuitive – it has to be because substantial numbers of users won't be familiar with computers. The device is based around one central activity area, the Notepad, and a series of icons located along the base of the screen which provide access to other services including an address book, a calendar, an icon-driven menu which acts as a door to other services, including storage, and comms. On the right hand side of the icon strip, you'll see Undo, Find and Assist icons.

Between these are three small icons – a clock, and two buttons which allow you to set the handwriting and shape recognition on or off – and a keyboard which you can pull up at any time. This allows you to click keys with the stylus as an alternative means of inputting data, and a way of adding words to the dictionary.

STAYING IN TOUCH: COMMUNICATIONS

The Newton is being flagged as a communications assistant as well as an intelligent personal one. Apple is offering a host of communications options for talking to other Newtons, Macs and PCs, as well as printers and modems, and all Newtons have a standard Mac serial port built in.

Sharing data held on the Newton centres around the universal In and Out boxes. You pick up any data from here, whether it has come from another Newton, a PC or a Mac.

Standard with every Newton is beaming, which uses infrared, like a television remote control, to communicate with other Newtons as well as Sharp's OZ/IQ. Data such as text, address cards, and diary pages can be transferred using the Beam option. The infrared send and receive LEDs are on the top edge of the case and the two communicating devices will need to point at each other for the facility to work properly. Data is transferred at 9600 baud and Apple claims the maximum reliable distance for beaming is about one metre.

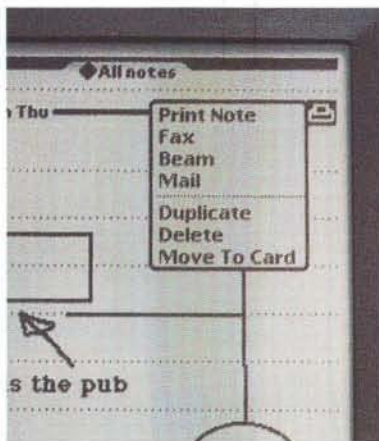
To beam a document you have to touch on the little printer icon on the LCD screen. This brings up the list of transfer options. Click on Beam and the dialog box asks whether you want to send or receive.

Confirmation of the transfer can be set to automatic in Preferences so you know if the beam was successful. You can set the Newton to receive beams automatically, too.

According to Apple's own research, many potential Newton buyers will already have a desktop computer, either a Mac or a PC. The relevant communication kits for Macs and Windows PCs will be offered as bundles and include a cable and software for the desktop machine. Connection to a Windows PC can be made via a serial link, while you can connect to a Mac using AppleTalk.

Standard kits will allow you to back up all your data and

Data can be shared between different Newtons as well as the Sharp OZ/IQ organiser using infrared beaming.



Clicking on the Newton's printer icon gives you access to the communications options which allows notes to be printed, faxed, beamed or mailed.

Beams can be received and messages confirmed automatically.

import or export simple text files from the Notepad, diary, address book and so on. Professional kits, which should be available soon, will allow specific file types to be transferred such as Word or FileMaker Pro. The kits will also support Apple Events, so Mac applications can be controlled from the Newton. Once Newton data has been transferred to a Mac, you can edit it.

The Synchronize option allows you to back up all the data on the Newton, including handwriting information it has already learnt, so if you lose one Newton, you won't have to teach your new one all over again. Synchronize is also clever enough not to overwrite any information that has changed on the Newton since you last backed up.

The connection kit makes it possible to distribute software on ordinary Mac floppies and download it to the Newton from the Mac.

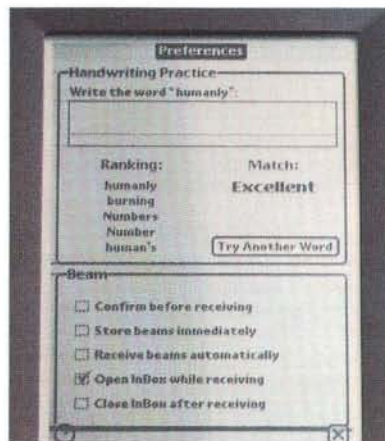
The imminent arrival of printer kits will allow direct connection to an output device via Newton's serial port. The kits will have 'clever' cables for specific printers which connect the Newton to the serial/parallel port, and upload their built-in printer drivers onto the Newton automatically.

The Newton can print to AppleTalk printers without any special cables or drivers because you can use standard AppleTalk connectors.

An optional 9600 baud fax model will be available for

modem and faxing data. Additionally, Hayes-compatible modems can be hitched up to the Newton's serial port. To send or receive data, you click on the Printer icon and select the fax or modem option.

Newton has a modular communications architecture and Apple says that future developments such as cellular modems and wireless communications will be easily added to existing Newtons as they are introduced.



The Notepad can handle text and graphic input and allows you to specify whether the objects you input are treated as text, graphics, or freehand shapes.

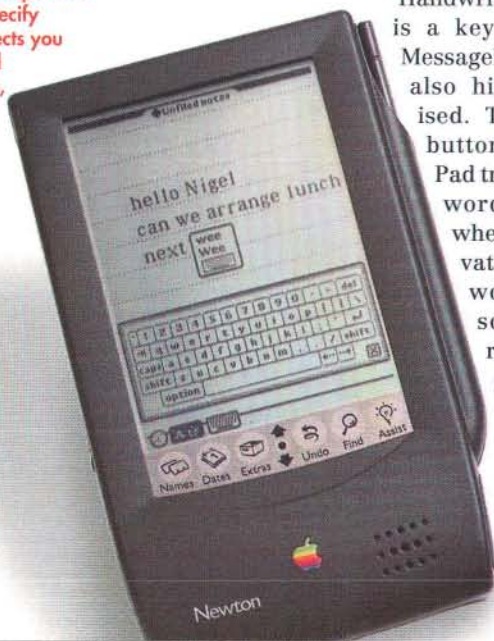
Handwriting Recognition

Handwriting recognition is a key technology in MessagePad – and it is also highly personalised. The recognition button on MessagePad translates written words into type – when it's not activated, the written word stays on-screen. If the recogniser fails to get the word, either because it can't analyse your writing or because it's not in the

dictionary, it will provide other – somewhat surprising – options to choose from via a light double-click on the word itself.

You can teach your MessagePad to understand your writing better by indicating how you write different characters and there's also a practice area where you can give Newton examples of your writing while learning how to tailor your style to suit the technology. Apple says reviewing the original word list and removing words you don't use can speed up recognition times, too. You can also set preferences explaining whether you want recognition biased towards fast and less accurate or slow and more accurate, for example.

Graphics recognisers work along similar lines with Newton. These allow you to scribble down pictures, maps, outlines alongside text, and have them tidied up, so that, for instance, a wobbly line becomes a perfect straight line. Running both recognisers at once tends to slow down both, but it



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can be done. There are times when you won't want to use the recognisers – for example, when inputting strings of names, but turning the facility on and off is easy.

Once you've customised your handwriting, you're away – and it won't take long to sort out a style MessagePad can handle, although it will get better all the time. Manipulating text and graphics you've input is very simple – using a series of intuitive gestures, you can delete words, add letters, or move and reshape pictures. To delete a word, for example, you literally scrub it out. Mac users will have no problems at all picking up these metaphors which rely essentially on the same point-and-click technology as their desktop machines.

Jot It Down

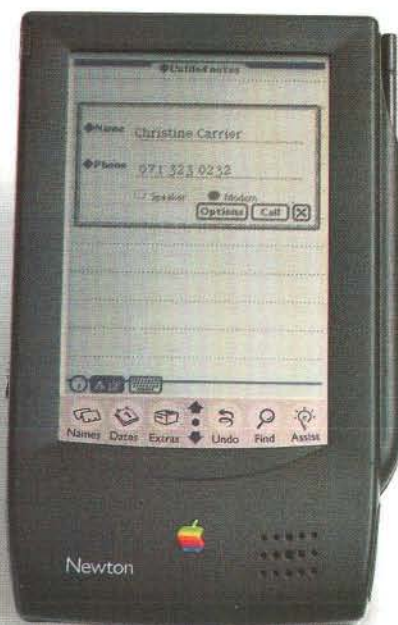
The Notepad is a scrolling message pad (literally) which opens as you power up the device and remains open permanently, although it may be covered by other windows.

You can use the Notepad to garner raw material – for example, to take down a name, an address or a phone number in text, or scribble down a rough map or outline. Each entry is divided simply by drawing a line across the page, and essential information indicating the location of the note and when it was created is stored on this line.

The Name button provides access to a contacts database: this is the list to which Newton Intelligence will refer, so it pays to keep it up to date. Inputting data is simple – prompts are included, and data can be viewed by company, last name or title. You can scroll through the file using a central list, and go straight to a chosen letter, but you may not need to: Newton intelligence means you could write a message on the Notepad, call up the right address, and beam, fax, or email (eventually) your missive to the right person. The names can be viewed in a variety of formats, including one with space for notes.

This information can be categorised into different folders which work along similar lines to the way the Mac is organised, at least to the user. You

The contacts book has several views, including card and notes, all information and card view. Here it appears in its basic form on top of the Notepad, which always remains open. Cards can be printed, faxed or duplicated and can also be organised by category.



can set up an urgent, vital, trivial and interesting folder. Notepad notes and Name cards can be put into the folder system but datebook entries can't – you can keep different name stacks on PCMCIA cards if you have a business and personal contacts book, for example.

The Date button provides access to MessagePad's calendar. This offers different date overviews – by day, by the hour by the month or year – and a to-do list. More importantly, you can use it to set up an appointment by simply writing in the details on the page. You can add notes to this and a customisable alarm system means MessagePad can provide reminders of appointments as they approach. Appointments can be concurrent, and can also be shifted around.

Added Extras And Essentials

The Extras button is the key to a whole series of additions to Newton, some of which should be regarded as essential rather than extra. The Extras windows collect these up and provides a desktop for all functions other than the Notepad and diary.

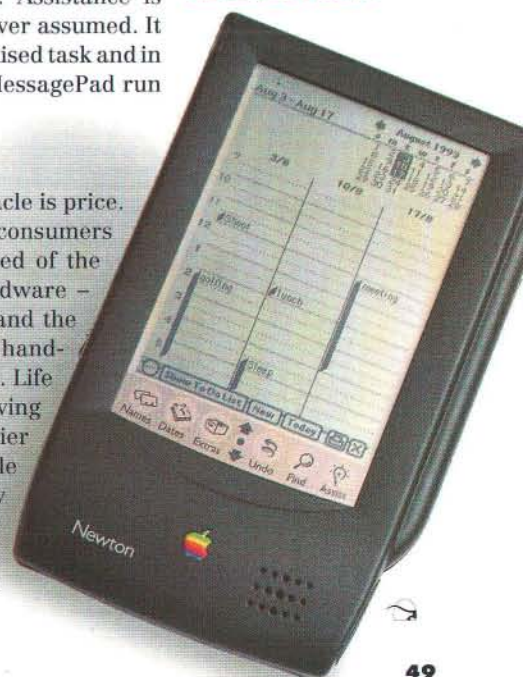
On the right side of MessagePad are the Find, Undo and Assist functions. Find will search and retrieve all uses of a defined word, part of word, or number of words. These could then be grouped and stored in a single folder. Undo does what it says: Newton can undo the last two commands input. Mac users will be familiar with this function – the only problem we found was in looking for the keyboard to type command-z.

Assistance, as its name suggests, is the route to calling up Newton Intelligence to help carry out requests. These requests are pre-defined covering call, fax, find, mail, print, remember, time and schedule – but they also include synonyms – breakfast, for example, will bring up a time of 7:00am, lunch 12:00am, or dinner 7:00pm. Assistance is always suggested and confirmed, never assumed. It links different functions into an organised task and in many ways is the glue that makes MessagePad run smoothly.

Handy Gadget

Will MessagePad take off? One obstacle is price. At £599, the device is expensive for consumers and offices will need to be convinced of the benefits. Another caveat is the hardware – will Newton be robust enough to stand the pounding it will get in briefcases and handbags and shirt pockets day after day. Life as an assistant can be pretty unforgiving – will the screen take it? The final barrier will simply be understanding. Apple has its work cut out to explain how MessagePad is different from 1000 lesser clones. Users will decide but on first showing, it is certainly worth considering.

The MessagePad calendar allows you to view the year in days, weeks, or months, pick out regular meeting times and, like all areas in MessagePad, you can move and manipulate information held here in conjunction with other functions. Drawing a marker allows the length and start up date to be adjusted, two lines mean two appointments simultaneously. Each page of the Date Book has a to-do list.



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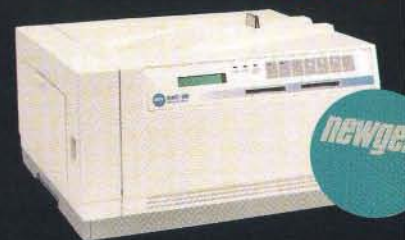


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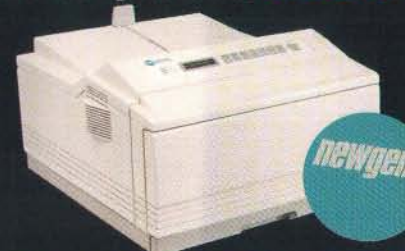
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By Nick Clarke

The gap between traditional and computer-based art is narrowing as increasingly sophisticated paint programs deliver the tools for novices and professionals alike.



Illustration by
Simon Crosbie
(using Painter)

Smart Art

MacUser
KEY REPORT
PAINT

Products Evaluated

BrushStrokes 1.0
Color It 2.0.1
Color MacCheese 2.0.8
Monet 2.0
Paint It 1.0
Painter 2.0a
Pixel Paint Professional 2.0
Studio 32
Zeus 0.9.4

What's the difference between Braque, Picasso, Monet, Renoir, Jackson Pollock and Paul Klee? Individuality. Every great artist, illustrator and designer has it. But could they have maintained their inimitable styles if they had used a computer? It would be unlikely using drawing software: look at the lines drawn in drawing packages like Illustrator, FreeHand or MacDraw – they're as bland as an Autobahn.

The same criticism has been levelled at pixel-based painting software. While the casual user sees paint software as a first step into abstract expressionism, the professional user sees a glorified Etch-a-Sketch system.

Things change. Developments over the past few years, such as pressure-sensitive input devices like the Wacom, colour cards and cheap colour Macs, have created a new generation of 24-bit paint software that's attractive to novices and professionals. The gap between traditional media

and computer-based methods is closing and software is appearing which offers a diverse range of tools and realistic painting methods which allow artists to express themselves.

Parallel to this is the shift away from traditional media like canvas. Many Mac-based illustrators are turning to paint software for multimedia projects, video work, on-screen presentations, disk-based training guides and the production of interactive entertainment on CD-ROMs.

Pressure Sensitivity

One of the major aspects of computer-based painting is pressure sensitivity, which allows hand skills to be translated into meaningful and individual marks onscreen. Painting with a mouse is like drawing with a bar of soap, but pressure-sensitive tablets like the Wacom free you from these constraints, allowing subtle brush strokes and builds of colour to be created using a stylus. It's only the more expensive 24-bit



IMAGE PROCESSORS

Programs like ColorStudio, Photoshop and Image Assistant differ from standard 24-bit paint packages in that they can manipulate, colour correct and fully separate continuous tone, full-colour images. This makes them ideal for pre-press production work like retouching and montaging because they provide flexibility when communicating directly with high-resolution input and output devices such as drum scanners, film recorders and high-end reprographic systems.

If you just want to use an image processor for painting, then you'll be wasting money. While all three programs offer comprehensive pressure-sensitivity support over a range of painting tools, the speed and sensitivity to natural hand movements can be problem. But if you want more technical control over the image making process then they are ideal.

For complex montage work using multiple images, all three programs offer extensive and very powerful masking features. Another powerful characteristic of Photoshop and ColorStudio is their ability to create special effects on images using plug-in filters. Filters like Motion Blur, Spherize, and Ripple add another creative

dimension to image making. ColorStudio also allows you the flexibility of creating custom effects filters using a special programming language called ColorTalk. Image Assistant, lacking support for plug-ins, is the weaker of the three in the special effects department.

Photoshop and ColorStudio also provide essential links with other graphics software, supporting a wide range of input and output file formats.

Image Assistant is the newest entrant into the image retouching market, and although it has some fine features, it does not really come close to the power of Photoshop and ColorStudio.



Adobe Photoshop 2.5
£725,
Principal Distribution 0706 831831



ColorStudio 1.5
£395,
Letraset 071 928 3411



Image Assistant 1.0
£449,
Principal Distribution 0706 831831

paint software, such as Painter, Pixel Paint Professional, Studio 32, Zeus and Color It, which supports this feature, though.

Painter comes closest to replicating the feel of natural painting. The program allows you the flexibility of programming the software, through its Pressure and Velocity settings, so it matches your style and speed of stroke. Painter also lets you link cursor size, opacity and colour to your drawing speed and direction of stroke. Each of Painter's art tools behaves like its 'real world' counterpart. The crayon tool smudges with all the clumpiness of a crayon, the felt tips bleed, watercolours wash with amazing subtlety, and even the eraser can remove areas gently.

Pixel Paint Professional, Studio 32, Zeus and Color It offer pressure sensitivity over a range of tools but this appears primitive in comparison with Painter. These programs allow control over the volume of paint sprayed on screen as you push the stylus down, and while this is a step in the right direction for applying a 'natural feel' to brush strokes, it's hardly a comprehensive solution. Painter goes further than its rivals by centralising the whole operational ethos on pressure sensitivity, and it's the clear choice if you're looking for a computer-based equivalent of natural media.

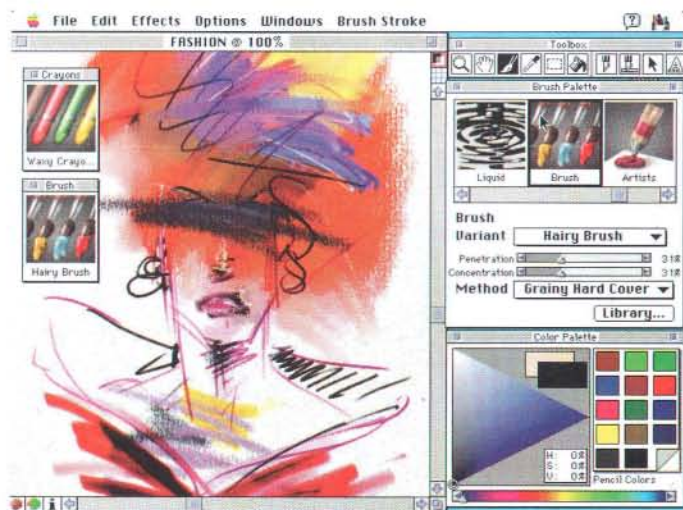
Surface Qualities

Different artists and illustrators like to work on textured surfaces to change the marks they make. Unfortunately, most 24-bit painting software ignores this quality, limiting you to painting on an incredibly smooth and artificial surface.

Only Painter and Pixel Paint Professional can specify surface textures. Pixel Paint Pro lets you import a textured file into a current document's mask layer. The mask is then activated and you paint over it. The program comes with nine different paper textures, ranging from slate to rice paper. However, each of Pixel Paint Pro's Pixel Paper files measures only 256 by 256 pixels, and in most cases you'll need to work on documents larger than this. There is a workaround, but it's clumsy.

Even regular art supply shops would have trouble supplying the range of surface textures offered by Painter, with over 50 different surfaces available from the Paper palette, ranging from soft, open textured cotton paper to watercolour and rough canvas.

You can use these to add surface textures in two ways: either with a brush to produce paper-sensitive brush strokes that show a little or a lot of the underlying texture; or by filling a selection of the whole image with them after you've finished a piece of work. The program treats a surface like a



Painter Painter offers a wide selection of natural painting tools designed to emulate their traditional counterparts. Ideally, you should use a larger monitor as Painter's screen can become quite cluttered.



Zeus One of the more expensive pieces of paint software, Zeus is similar to Pixel Paint and Studio 32 in including a separate text layer which can be used to print text out at high resolution.



3D object, which means you can control the grain size and how the paper texture is lit. It will calculate the locations and colours of highlights and shadows, allowing the subtle changes to your painting. The program also lets you create and capture your own paper textures from existing images.

Filters, Plug-Ins And Effects

There is now a trend for 24-bit paint software to incorporate plug-in filter technology and tools, creating an almost hybrid image processing/painting application. Some 24-bit paint programs are beginning to use Photoshop's industry-standard plug-in filters and Aldus' Gallery Effects. Software that adopts this approach is bound to find favour with users, because you can expand the capabilities of the software without a large investment.

At the higher end, Painter once again represents the best value for money as the program can access most Gallery Effects and Photoshop plug-ins, and includes full support for Kai's Power Tools. Also, it contains built-in filters for image sharpening and softening, motion blur, glass distortion and an excellent dodge and burn tool. The program has been upgraded to version 2.0a for compatibility with the Photoshop 2.5 plug-ins.

Pixel Paint Professional can use Photoshop plug-ins, but Studio 32 can't and has limited filtering and image processing abilities. Pixel Paint Pro also has problems using the new filters found in Photoshop 2.5. Delta Tao's Zeus has customisable filters and standard filters for blurring and sharpening, but doesn't support third-party plug-ins.

Even cheaper 24-bit paint packages are getting in on the act. Color It comes with over 30 image enhancing filters, called Kernels, which allow you to create some of the special effects reminiscent of Photoshop. These include filters for edge detection, blurring, shadows, and unsharpening. Typical image processing tools like dodge and burn are

MONOCHROME PAINTING

Black-and-white paint packages still exist because not everyone needs to work in colour. The two leading non-grey-scale packages are Claris' MacPaint 2.00 and Electronic Art's Studio 1. MacPaint, the original black-and-white paint program, is expensive (£95) considering its limited abilities. It now supports multiple documents and has a basic tool kit for pixel pushing.

Studio 1 leaps ahead of MacPaint. It features impressive flip-frame animation and painting tools that have 300dpi capabilities. The program also includes a HyperCard playback utility (XCMD) which allows animations to be played directly within a stack.

The leading grey-scale painting package is Fractal Design Sketcher. The program allows images to be created using 256 shades of grey and uses an interface similar to Painter. It features a range of image retouching tools and is an ideal program for grey-scale painting and photo retouching. It's also much cheaper – at £99 – faster and less memory-hungry than Painter.

Like Painter, Sketcher is designed to approximate an artist's toolbox. It includes

a variety of pressure-sensitive brush styles simulating grainy or smooth strokes and a collection of pencils, chalks, charcoals. For more special effects, it includes modifiable grey-scale gradients and a Frisket tool directly derived from Painter that masks off and protects areas when applying effects. Another feature borrowed from Painter is the ability to simulate different paper grains and surface textures. For image control and manipulation, the program provides contrast and brightness controls and an equalise feature that evens image brightness.



MacPaint 2.0
£95,
Claris 081 756 0101



Studio 1
£99.99,
Electronic Arts 0753 549 442

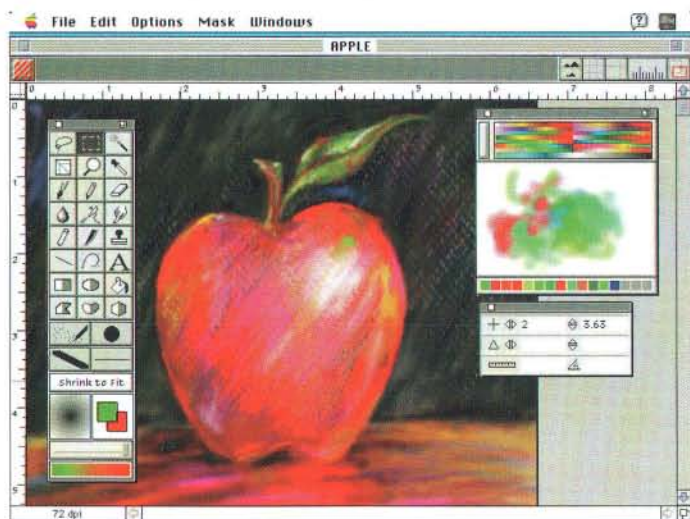


Sketcher 1.0
£99,
Letraset 071 928 3411

also included, although these don't operate with the same subtlety as those in Painter.

Color It also allows you to use some Photoshop plug-ins for direct control of popular scanners and for saving files in special formats like JPEG. If you're looking for a cheap, cut-down, alternative to Photoshop with lots of special filter effects then this program is a good choice.

Claris' new 24-bit paint package, BrushStrokes, also allows you to use Gallery Effects and some of Photoshop's plug-in filters for basic image processing tasks, although tests using popular third-party filters like Kai's Power Tools met with limited success. Basic 24-bit paint software like Colour MacCheese and Paint It have no filtering capabilities and can't access third-party plug-ins.



Pixel Paint Professional Pixel Paint Professional offers basic pressure-sensitive support over a range of tools. It has an uncluttered interface with its more powerful features hidden in pop-up menu items.



Monet Monet recreates the painting styles of the Impressionist period. It's fun to use, but very expensive considering that it's not a standalone painting package.



MORE POWER FOR BETTER PAINTING

Creating an ideal painting environment on your Mac means you'll need some additional pieces of hardware. For realistic and vibrant colour, a 24-bit graphics card fitted into one of the NuBus slots in your Mac is a must. It's also a good idea to choose a card that has on-board QuickDraw acceleration for faster working. An ideal choice for under £500 is the Radius Precision Colour 24XP at £399, which supports 24-bit graphics on 13in and 16in monitors. If you're using an LC, Centris or Quadra you don't need a card because extra colour depth can be gained through adding VRAM (video RAM).

The addition of a pressure-sensitive tablet and pen is also essential if you take painting seriously. The excellent Wacom range starts at £399 for the ADB A5 tablet and CalComp's Drawing Board range starts at £395. If your paint program supports Photoshop plug-ins, the essential

buy is Kai's Power Tools. This is a set of 33 Photoshop plug-ins that will extend the capabilities of your paint package, giving you access to some very powerful effects. Included with the Power Tools are plug-ins for texture and fractal generation, and an amazing gradient designer.



Kai's Power Tools
£120,
MacLine 081 401 1111

Radius Precision Colour 24XP
£399, Computers Unlimited 081 200 8282
CalComp 33000 Drawing Board,
From £395 to £2995, CalComp 0734
320032

Wacom Pressure-Sensitive Tablets
From £399, Computers Unlimited 081 200
8282, Letraset 071 928 7551

Monet is one 'paint' program that relies entirely on filtering. Unlike conventional 24-bit paint packages which ask you to select an area to apply a filter to, Monet uses a series of painting tools to create neo-Impressionist effects on an imported base image. After you've loaded an image into Monet from another paint or scanning program, you use Monet's tools to alter the image appearance by changing the underlying pattern of colours. If you like Impressionist styles, this program will help you achieve them, although it has limited painting features for stand alone image making.

Image Masking

Masking is another high-end feature being taken up by the cheapest of 24-bit packages. Masking acts like conventional masking tape, allowing you to protect areas from paint splashes. The process generally involves you making an area selection

and converting this to a masked selection. Masks allow you experiment with images and are an essential feature for the ambitious user.

Color It offers comprehensive masking control for feathered selection masks or separate 8-bit document masks. The program has no alpha channel facility – which allows masks to be saved as part of the image – so all document masks are saved as separate files, with default names based on the master file. Because its document masks contain 256 shades of opacity, you can create reasonably subtle blending operations using multiple images.

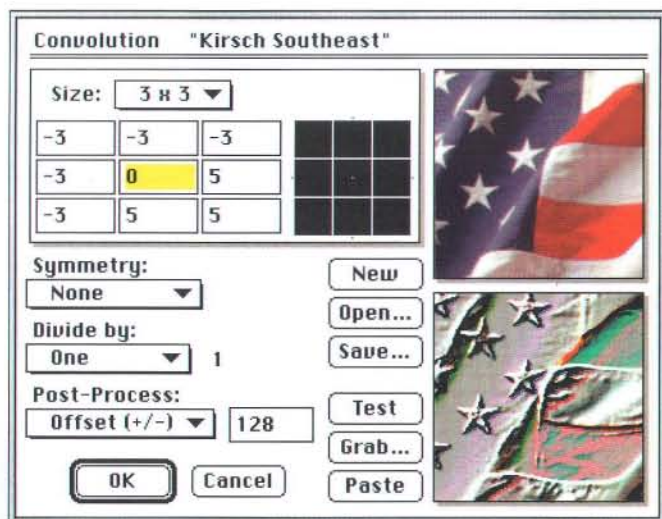
BrushStrokes also offers masking facilities, although, these are limited to area selections and are not as comprehensive as Color It's. Entry-level paint packages like Paint It and Color MacCheese don't have any masking facilities.

Painter, Pixel Paint Pro, Studio 32 and Zeus have extensive and quite powerful masking options. Zeus' 24-bit colour masks allow you to use a complete full-colour document as a mask. It lets you specify which portions of an image should be revealed when mixed with another. This feature gives a certain amount of creative freedom when you montage images, and the facility is well implemented and a doddle to use.

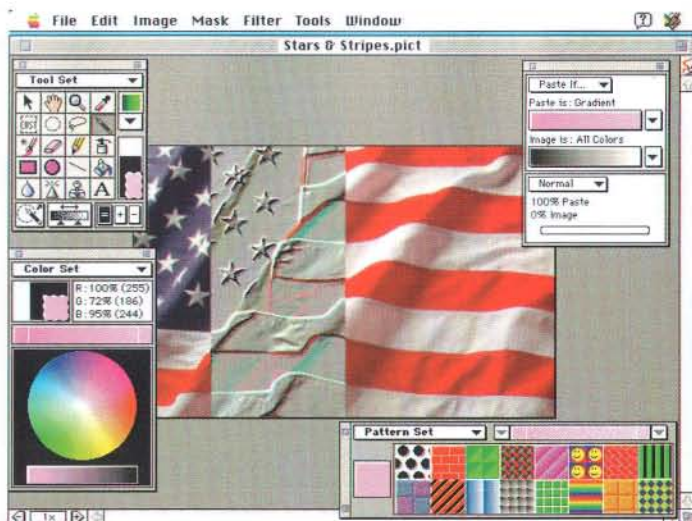
Painter masks are called Friskets. Using a comprehensive set of selection tools, you can quickly define a feathered Frisket area, and a series of Frisket icons in the document window allow you to quickly turn the Frisket on or off. The program has the added flexibility of allowing imported EPS files from Aldus FreeHand or Adobe Illustrator to be used as masks.

Colour Choice

A 24-bit paint program gives you access to around 16.8 million colours. This may sound like the biggest paintbox in the world, but colour selection and mixing is often hindered by the software.

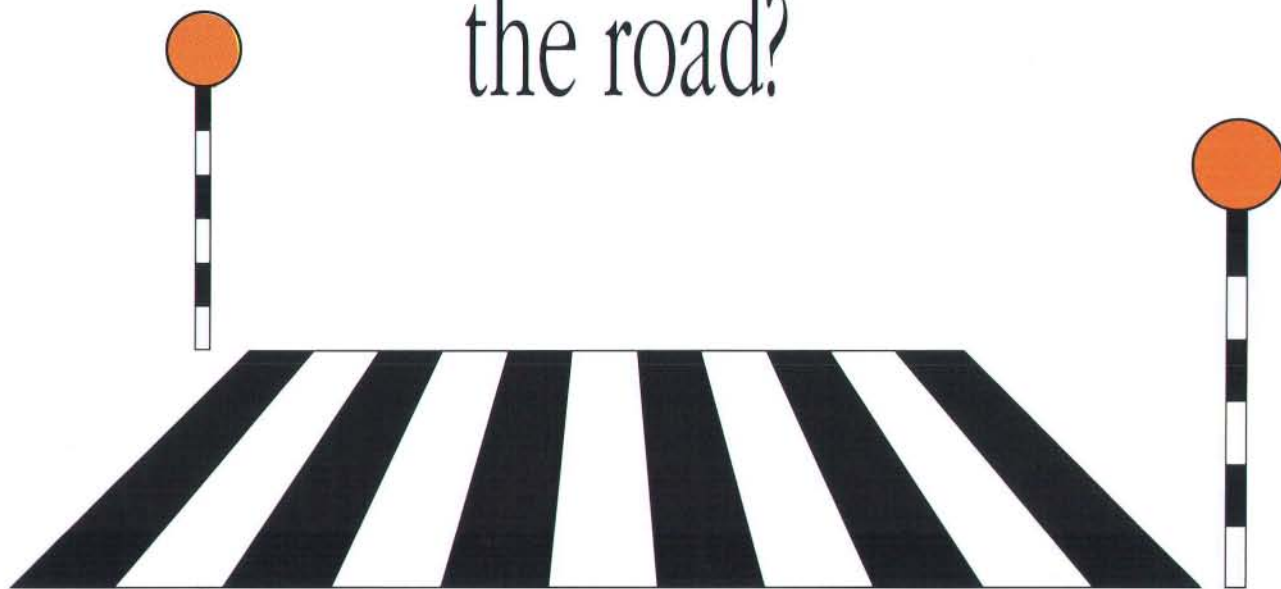


Color It Each of Color It's Kernel filters can be adjusted and the effect previewed in the Convolution dialog box. You can also create your own filters or adjust existing ones.



Color It Color It includes impressive painting tools that support pressure-sensitive devices. It also features a number of image processing filters called Kernels, which allow special effects to be created.

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HYBRID APPLICATIONS

If you need a flexible paint and draw environment then SuperPaint 3 and Canvas 3 offer a good balance of features. Both programs use different layers for draw and paint objects, allowing you to freely mix text and other PostScript objects with paint images. Canvas has limited painting abilities and offers little in terms of special effects.

If you're looking for a combined drawing package that has the ability to manipulate 24-bit images, then SuperPaint 3 at £99 is a bargain. The program is more flexible than Canvas when dealing with 24-bit images through its use of Aldus Gallery Effects (included free with the program), a collection of 16 plug-ins for special effects designed to recreate particular painting styles. These include Fresco, Dry Brush, Chalk and Charcoal, Splatter and Emboss. Each effect is contained within its own Settings dialog box, which allows you to control and preview the effect before it's

applied to an image area. Like SuperPaint, Canvas allows you to combine draw-type objects with paint objects within a single multi-layered document. The painting features of Canvas are limited and many of the tools are similar to ones found in MacPaint 2.0.

All the tools function in 1-bit, 8-bit and 32-bit colour, but they aren't anti-aliased, which means that you can't use Canvas as a quick and dirty retouching tool for scanned images. However, the program will allow you to change the resolution of a paint object from 72dpi to 300dpi, a useful feature if you are using line-art (black and white) images.



Aldus SuperPaint 3.0
£99, Aldus 031 220 4747



Canvas 3.0
£295, Principal Distribution
0706 831831

Two of the most basic methods of selecting colour are through a floating palette that contains a range of colours within a document; alternatively, a standard colour wheel similar to Apple's own colour picker is employed. Versions of these colour selection methods are used by cheaper paint software like Color MacCheese and Paint It. This type of colour selection is limited because it provides little opportunity to create a mixture of colours, but it has the advantage of speed and simplicity.

One step ahead of this is the technique used by BrushStrokes, Zeus and Color It. These use a colour wheel with the addition of a lightness and darkness slider next to the active colour selection. This useful feature allows you to create subtle shades from a selected base colour very quickly, and is more efficient than the standard palette or straight colour wheel selections.

Pixel Paint Pro and Studio 32 use floating colour palettes and separate windows for specialised

colour models like CMY and Pantone colours. They also include essential off-screen mixing areas, where you can blend multiple colours together before they are applied to an image.

Painter's ability to tap into the expanse of colour the Mac has to offer is exceptional and thoughtfully implemented. Colour selection is similar to Photoshop's, using a colour triangle which contains colours organised by value and saturation. In addition to this, a spectrum slider allows you to instantly jump to a new colour range. Arrows at each end of the slider help you home in on the exact colour you are looking for. The whole colour system is fast and intuitive to use and gets close to how illustrators are trained to select colour.

Text

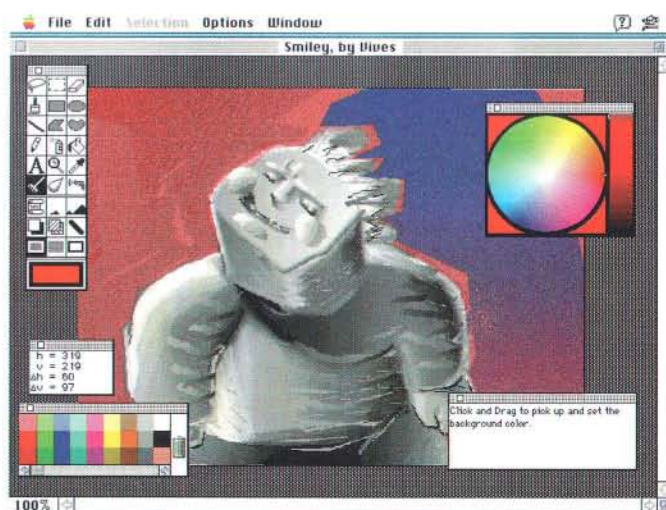
If you're involved with multimedia projects, on-screen presentations or video work, the manipulation of type is critical. The essential feature of good text support is anti-aliasing. This technique removes 'jaggies' in angular lines and edges, allowing a more natural appearance. All the programs mentioned including Color MacCheese and Paint It support anti-aliased text using TrueType and PostScript Type 1 fonts (with ATM) and the quality of results is consistent between each.

A useful feature of Pixel Paint Pro, Studio 32 and Zeus is that they have separate layers for PostScript fonts, allowing you to edit and position text with ease and to generate high-quality output results. Zeus also lets you manipulate True Type fonts with stretches and distortions, although it refused to function properly with PostScript Type 1 fonts, which is a major problem considering its price.

Painter's approach to type is also problematic, as you have to individually load a font into the program before it can be used, and the program only allows you to work with one font at a time. This can be annoying as font loading is time consuming, especially when working with mixed typefaces.



BrushStrokes BrushStrokes is a 24-bit entry-level paint package that offers a clean, easy-to-use interface, uncluttered by sophisticated features.



Color MacCheese Still a beginners' favourite painting tool, Color MacCheese offers a straightforward interface and a constant help feature, making it an ideal entry-level program.



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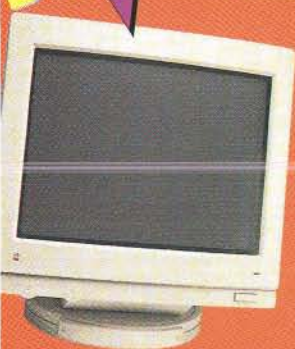
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PAINT SOFTWARE COMPARED

	BrushStrokes 1.0	Color It 2.0.1	Color MacCheese 2.0.8	Monet 2.0	Paint It 1.0	Painter 2.0a	Pixel Point Pro 2.0	Studio 32	Zeus 0.9.4
Painting/Imaging Tools									
Customise paint tools	Yes	Yes PS	Yes	Yes	Yes	Yes PS	Yes PS	Yes PS	Yes PS
Opacity control	Yes	Yes	Yes	Yes	Yes	Yes PS	Yes	Yes	Yes
Gradients	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Sharpen	Yes	Yes	No	No	No	Yes PS	Yes	Yes	Yes
Blur	Yes	Yes PS	No	No	No	Yes PS	Yes PS	No	Yes
Smudge	Yes	Yes PS	No	No	No	Yes PS	Yes	Yes	Yes
Stamp (clone)	Yes	Yes	No	No	No	Yes PS	Yes	Yes	No
Lighten	Yes	Yes	No	Yes	No	Yes PS	Yes	No	No
Darken	Yes	Yes	No	Yes	No	Yes PS	Yes	No	No
Chalk	No	No	No	Yes	No	Yes PS	Yes	No	No
Crayon	No	No	No	No	No	Yes PS	No	No	No
Wet paint	No	No	No	No	No	Yes PS	No	No	Yes
Felt marker	No	No	No	No	No	Yes PS	No	No	No
Digital 'paper'	No	No	No	No	No	Yes	Yes	No	No
Masking									
8-bit masking	Yes	Yes	No	No	No	Yes	Yes	Yes	Yes
24-bit masking	Yes	Yes	No	No	No	Yes	Yes	Yes	Yes
Document masks	No	Yes	No	No	No	Yes	No	No	No
Selection masks	Yes	Yes	No	No	No	Yes	Yes	Yes	Yes
Text									
Anti-aliased	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Separate text layer	No	No	No	No	No	No	Yes	Yes	Yes
PostScript Type 1	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No
TrueType	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Multiple fonts	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes
Selection Tools									
Magic wand	Yes	Yes	No	No	Yes	Yes	Yes	Yes	No
Scissors	No	Yes	No	No	No	Yes	Yes	No	No
Marquee	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Lasso	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Filters And Effects									
Non-standard built-in	Yes	Yes	No	Yes	No	Yes	Yes	Yes	Yes
Photoshop plug-ins	Yes	Yes ¹	No	No	No	Yes	Yes ¹	No	No
Aldus Gallery Effects	Yes	No	No	No	No	Yes	No	No	No
Slant	Yes	Yes	No	No	Yes	Yes	Yes	Yes	No
Free rotate	Yes	Yes	No	No	Yes	Yes	Yes	Yes	No
Perspective	Yes	Yes	No	No	Yes	No	Yes	Yes	No
Distort	Yes	Yes	No	No	Yes	Yes	Yes	Yes	No
Scale	Yes	Yes	No	No	Yes	Yes	Yes	Yes	No
Wet paint	No	No	No	No	No	Yes ³	Yes	No	Yes
Colour models	RGB HSV System	RGB HSV System	RGB HSV System	RGB HSV	RGB HSV System	RGB HSV CMY System	RGB HSV CMY System Pantone	RGB HSV CMY System Pantone	RGB HSV System
Output formats	PICT TIFF	Photoshop PICT TIFF EPS MacPaint QuickTime compression	PICT TIFF QuickTime compression	PICT TIFF QuickTime compression	PICT, TIFF MacPaint QuickTime compression	Photoshop PICT TIFF EPS DCS	PICT TIFF EPS MacPaint	PICT TIFF EPS	PICT TIFF MacPaint QuickTime compression
Input formats	PICT TIFF MacPaint	Photoshop PICT TIFF MacPaint EPS PCX ²	PICT	Photoshop PICT TIFF	PICT	Photoshop PICT TIFF EPS PCX	PICT TIFF EPS MacPaint	PICT TIFF EPS MacPaint	PICT TIFF
Document									
Change document resolution	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Change document size	Yes	Yes	Yes	Yes	No	Yes	No	No	Yes
Change colour depth	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
Custom tool palettes	Yes	Yes	No	No	Yes	Yes	No	No	No
Multiple undo	Yes	Yes	No	Yes	Yes	No	No	No	Yes
Magnification	25% to 800%	12.5% to 3200%	100% to 200%	10% to 800%	25% to 800%	8.3% to 1200%	25% to 1600%	12.5% to 800%	12.5% to 800%
Grid	Yes	Yes	No	No	No	Yes	Yes	Yes	Yes
Preview effects	No	Yes	No	No	No	Yes	No	No	No
Context-sensitive help	Yes	Yes	Yes	No	No	No	No	Yes	No
Printing									
Composite colour	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Process colour separations	No	No	No	No	No	Yes	Yes	Yes	Yes
Spot colour separations	No	No	No	No	No	No	Yes	No	Yes
System 7									
Publishing And Subscribe	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
32-bit addressing	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Balloon Help	No	No	No	No	No	No	Yes	No	No

PS = Pressure-sensitive tool 1 = Only for scanners and special output formats 2 = Using additional Photoshop plug-ins for all input formats 3 = Can't use Photoshop 2.5 plug-ins



One irritating feature of all paint software is that there is no control over kerning, and word and line spacing after they have been dropped onto an image. This causes problems, especially if your text is sitting on a complex background.


Take Your Pick

If budgets are tight and you need a basic package, Color MacCheese and Paint It offer similar features. Color MacCheese is more straightforward, although it has a poor manual and occasionally crashes under System 7. One step ahead of both programs is BrushStrokes, which is ideal for novice users, yet contains sophisticated features like masking. It can also use some third-party plug-ins so you can extend its capabilities.

If you're looking for a cheap introduction to image processing, or want a good paint application for multimedia work, Color It is excellent value for money, offering fine painting features, good masking control and a host of image processing effects. However, it lacks decent printing facilities and full support of third-party plug-ins. If you own a CD player, buy the CD version – it's the same price as

the disk-based set but you get over 400 colour TIFF images which are copyright free and LightBox, an image browsing retrieval package.

At the higher end of 24-bit painting, Pixel Paint Professional, Studio 32 and Zeus are beginning to look over-priced and jaded. None of them fully exploits the capabilities of pressure-sensitive devices and only Pixel Paint utilises digital papers. Studio 32 and Zeus have no expansion capabilities through plug-ins, which is disgraceful considering their high price. If you're looking for pre-press capabilities, all of them offer limited four-colour separation facilities, and Pixel Paint and Studio 32 have Pantone colour support.

But if you want a 'natural' digital painting environment that fully uses pressure sensitivity and digital papers, contains high-quality image processing capabilities, masking and can output process colour, Painter is a one-stop choice. The program is the best buy for the dedicated, professional user, and considering its cost, it has great flexibility, especially with third-party plug-ins. It's probably one of the most innovative computer design products to appear on any platform. 

FINAL REPORT

BrushStrokes 1.0



Pros Easy to use • Good introduction to 24-bit painting • Excellent set of customisable tools •

Custom interface • Supports Photoshop plug-ins and Aldus Gallery Effects • Good masking • Anti-aliased tools • Excellent tutorial and manual

Cons No pressure sensitivity • No colour separation facilities

Manufacturer Claris

Price £105

Requires Mac LC or II, 4M RAM

UK distributor Claris 081 756 0101

Color It 2.0.1



Pros Easy to use • Powerful features • Excellent range of tools and controls

Cons Limited output • No process colour separation • Lacks full support of Photoshop plug-ins

Manufacturer MicroFrontier

Price £195

Requires Classic II, Mac LC or II, 2M RAM

UK distributor Softline 081 401 1234

Color MacCheese 2.0.8



Pros Very easy to use • Ideal entry-level package • 'Weird' transmogrify tool •

Anti-aliased brushes and objects
Cons Basic 24-bit painting with limited abilities • Prone to crashes in System 7

Manufacturer Delta Tao

Price £62

Requires SE/30, Mac LC or II, 2M RAM

UK distributor KimTec 0202 888873

Monet 2.0



Pros Creates neo-Impressionist effects • Supports high resolution files • Fast, easy, fun

painting
Cons Very limited painting abilities for standalone image making • Expensive

• Poor manual • No pressure-sensitivity support

Manufacturer Delta Tao

Price £266

Requires Mac LC or II, 2M RAM
UK distributor KimTec 0202 888873

Painter 2.0a



Pros Best pressure sensitivity support of any paint package • Wide selection of 'natural'

painting tools • Intuitive to use • Excellent range of features

Cons Some tools very slow • Poor font handling • Can be memory hungry

Manufacturer Fractal Design

Price £325

Requires Mac LC or II, 5M RAM

UK distributor Letraset 071 928 3411

Paint It 1.0



Pros Easy to use and learn • Ideal for children or level-entry painters • Custom

palettes • Anti-aliased brushes and objects • Good manual

Cons Not sophisticated enough for the professional user • Basic 24-bit painting with limited abilities • No masking • No pressure sensitivity

Manufacturer MicroFrontier

Price £39

Requires Classic II, Mac LC or II, 2M RAM

UK distributor Softline 081 401 1234

Studio 32



Pros Pressure sensitivity on some tools • PostScript text layer • CMYK colour separation and Pantone

support • Good masking features

Cons Overpriced • Sluggish operation with some tools • Primitive pressure sensitivity • No support for Photoshop plug-ins • Few image processing features

Manufacturer Electronic Arts

Price £500

Requires Mac II, 5M RAM

UK distributor Electronic Arts 0753 549442

Zeus 0.9.4



Pros Powerful 24-bit masking • Basic animation • Full-colour separation •

Some pressure sensitive tools • Separate text layer • Stretchy TrueType text manipulation •

Negative alpha channel enhancing • Good gradient control

Cons Overpriced and buggy • Poor support for PostScript fonts • No support for Photoshop plug-ins • Very poor manual

Manufacturer Delta Tao

Price £332.67

Requires Mac LC or II, 2M RAM
UK distributor KimTec 0202 888873

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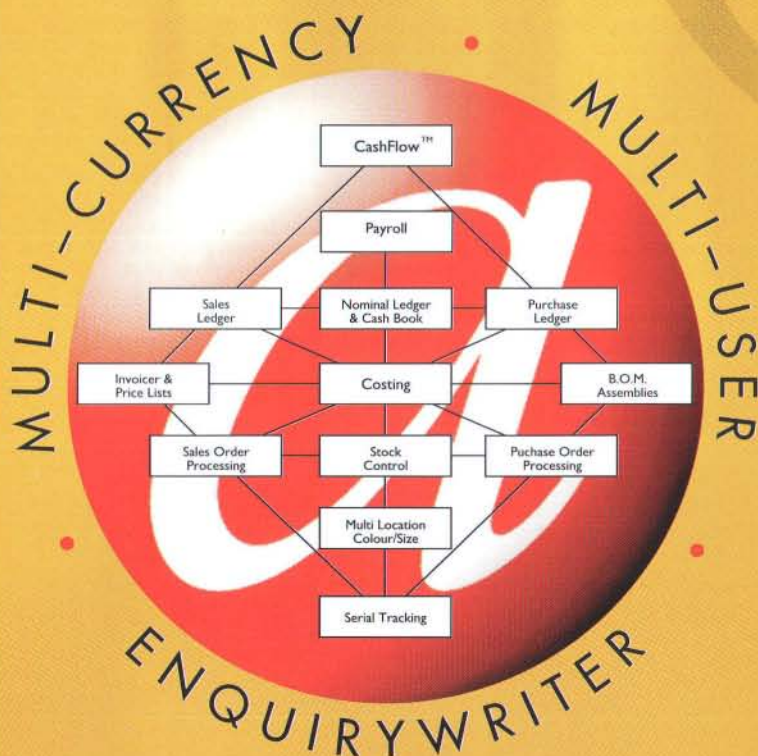
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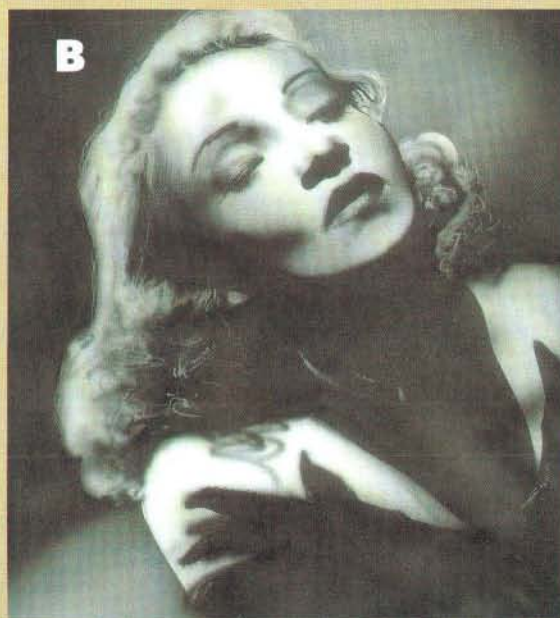
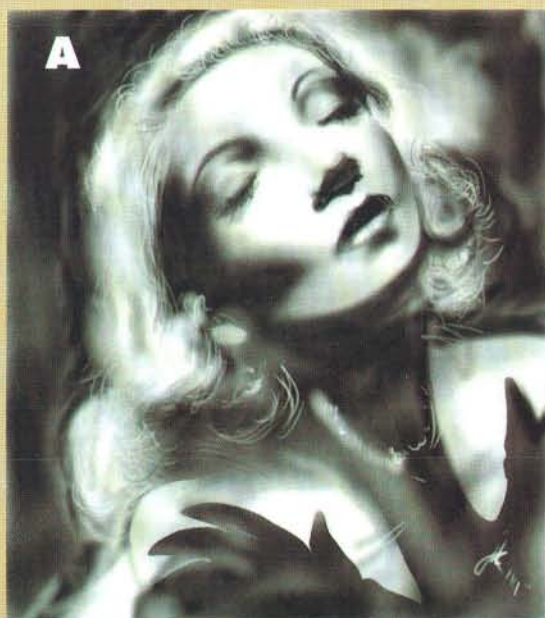
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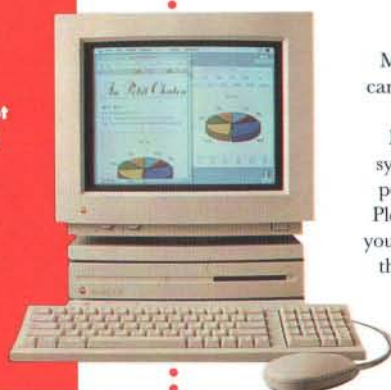
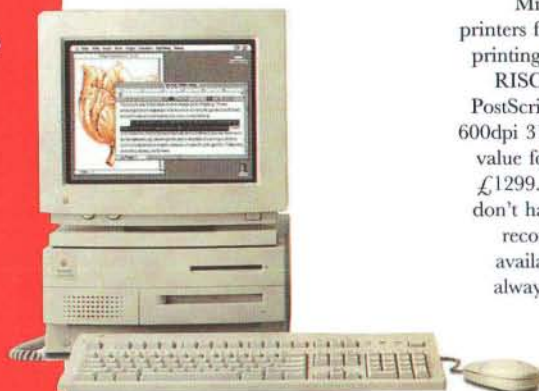
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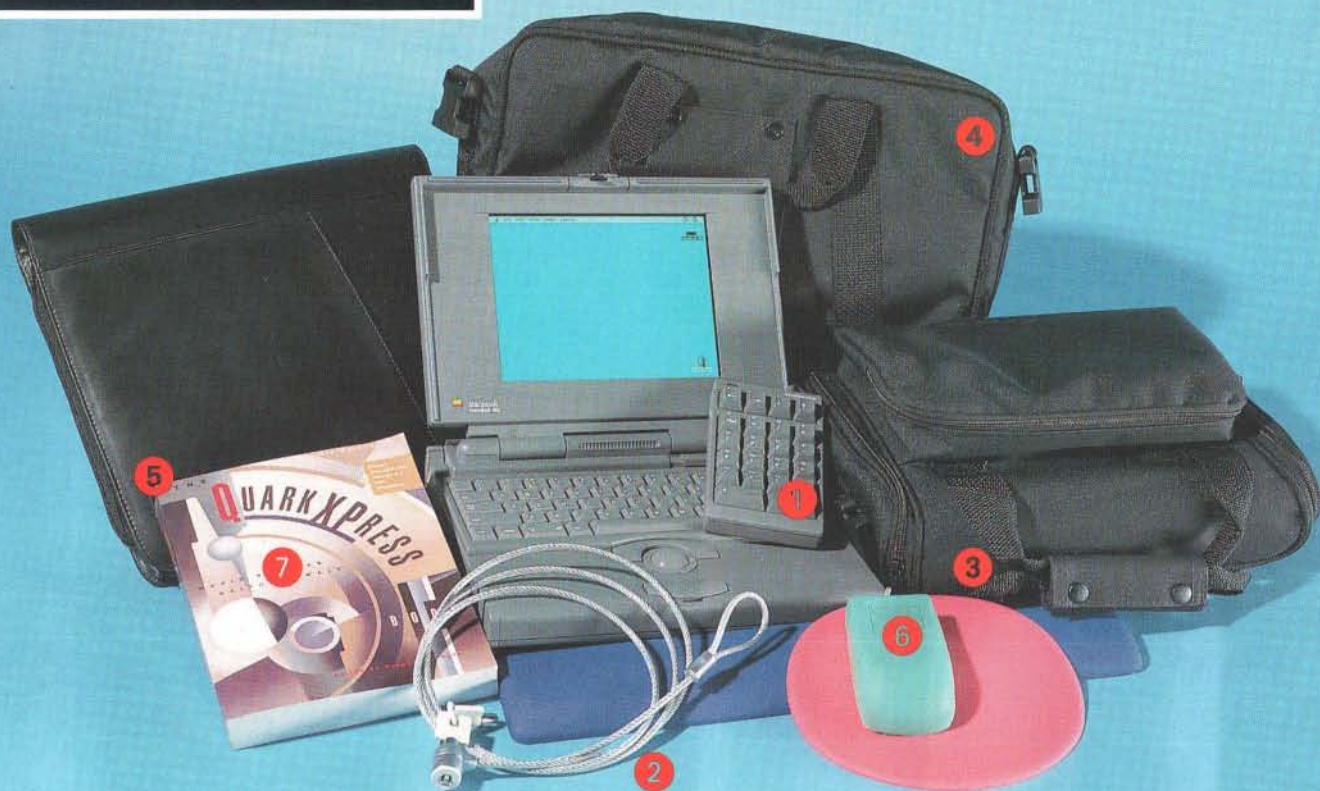
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6 Brighten up your work space with Padware™ - the colourful and functional accessories for your Mac! Rated by Tony Tyler in his Brief Encounters section, (Vol9 No8), you can now order Padware™ direct from MacCessories. The **Mouse Cover** slips over your mouse and improves its ergonomics. It's soft to the touch and machine washable! The **Wrist Rest** has a sloping edge to allow the user to comfortably adjust

work position. A ledge holds the rest in place with the keyboard. The **Mouse Pad** with its circular shape provides optimal work area. The soft corners eliminate wrist irritation. And it looks good too! Items available separately and in these colours: Wild Raspberry, Jade or deep Royal blue.

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Wrist Rest	DB58A	DB59A	DB60A	£12.95 (£12.30)
MousePad	DB61A	DB62A	DB63A	£7.95 (£7.55)

Quark XPress Book

7 The best-selling guide to the most powerful DTP program available is required reading for serious XPress users. Providing tips for printing and using XTensions, power typesetting and typography and for the efficient creation of large and small documents. With a section outlining XPress 3.1's numerous new features and tips to help users take advantage of those features. Authors: David Blatner and Keith Stimely

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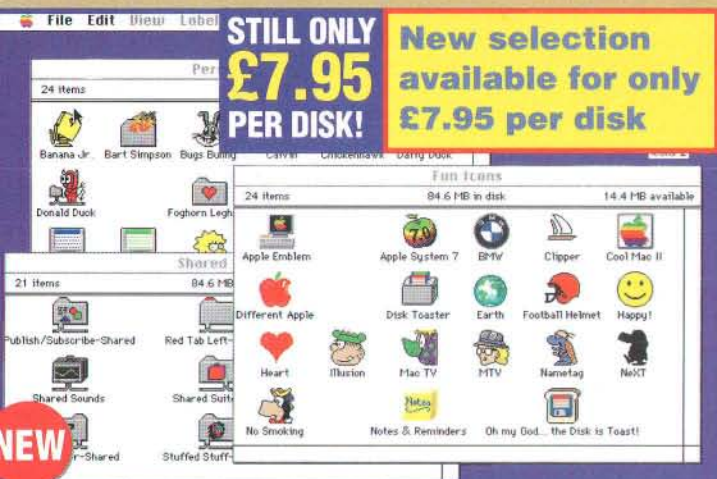
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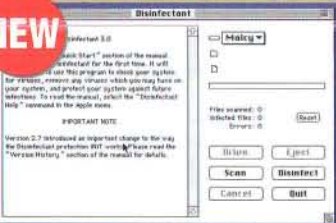
Icons 2 (BB84A)

This disk contains over 400 icons. As with Icons 1, they are only useful under system 7 and will not be seen under system 6. *High Density disk.*



Icons 1 (BB83A)

This disk contains over 200 icons and a folder icon making program. The icons are mainly on empty folders as they take up less room that way. You can copy the icons onto your own applications, documents and folders for a brighter desktop. The Folder Icon Maker program folder contains its own documentation. These icons are only useful under system 7. They will not be seen under system 6. *Double Density disk.*



File Archivers and Disinfectant 3.0 (BB80A)

Disinfectant 3.0 - The latest version of one of the best anti-virus programs around. It will scan all your disks, install a resource that will always look out for and delete most viruses. The help file contains information about the program and about all known Mac viruses. Disinfectant 3.0 detects two new viruses and was released on 14th Feb 1993. Runs under systems 6 and 7. **Compact Pro, Stuffit Classic, Stuffit Lite** are popular archiving and compression utilities. They are useful for keeping old files without taking too much room; you can get as much as two to one compression on simple text files. Each program is capable of stuffing files and folders. They can also create self extracting archives like the ones on this disk. The programs runs under systems 6 and 7.

Stuffit Expander expands and decodes many different archiving and encoded files. This program runs under systems 6 and 7. *High Density Disk*



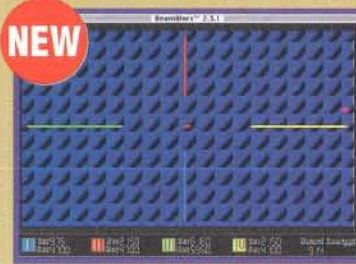
Games 21 (BB87A)

Solarian II is an excellent arcade game. It features amazingly smooth colour graphics and superb sounds. Solarian requires a minimum of 640 x 480 pixels or larger and 256 (8bit) greyscales or colour. *Double Density Disk.*



Arcade Games (BB81A)

Storm is a clone of the Arcade game of the same name. A fast action game where you have to destroy the shapes coming to get you before you shoot off through space to the next scene. Requires a colour screen. **MacBzone** is a Macintosh version of a three dimensional tank battle. You, the valiant but lone tank commander, vs a slower but infinite enemy. The enemy will always win, in time, but how much time you can buy depends on your skill as a tank commander. MacBzone requires system 6.0.7 or higher and a 68020 +68881 combination or higher (it requires an FPU). Will run on black and white systems and will take some advantage of colour on colour systems (runs best in 1bit or 4bit modes). **Nuke Snake** is a one or two player arcade game. A cross between "snake" and "tank" games. Runs on any Mac with System 6.0 or greater, in colour where available. **MacMan** - Guess what this game is similar to! It runs on both colour and black and white. *Double Density disk.*



Games 18 (BB82A)

BeamWars is a game for one to four players. You have to steer your beam, leaving a trail around the screen without hitting any other trail. This game runs under system 7 and requires a colour screen. **Columns** is an interesting variant of Tetris. You must line up the three different patterns in each column as they fall and make three in a row with adjacent columns. This game runs under system 6 or system 7 on either a black and white or a colour screen. *Double Density Disk.*



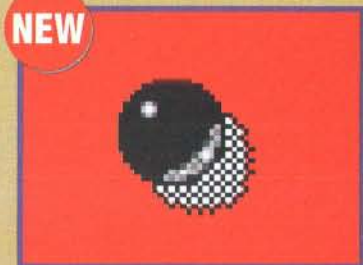
Games 20 (BB88A)

Bolo is a 16 player graphical networked real-time multi-player tank battle game. It has elements of arcade-style shoot-em-up action, but for the serious players who play 12 hour games with 16 players working in teams in different networked computer clusters around an office or university campus, it becomes more of a strategy game. You have to play it to understand. If you are all by yourself you can still play and gain experience for the day when you can find someone else to play against. There are many different maps to a battle upon and there is a map editor included so that you can create your own landscapes. This program should run on everything from the MacPlus to the Quadra 900 in colour or black and white. *Double Density Disk.*



Screen Savers (BB85A)

Tiny Saver is a small screen saver that uses just seven Kbytes of disk space and even less memory. **Dark Side of the Mac** is a screen saver similar to After Dark. The system 7 one contains forty different screen savers and the system 6 version contains about 35. The two Dark Side documentation files explain everything you need to know about installing Dark Side. Dark Side will run under both system 7 and system 6, however, you must choose the correct version. *Double Density Disk.*



Games 19 (BB86A)

Oxyd is a game for the mind and a steady hand. You have to guide a ball around certain obstacles but have to work out exactly what it is that you have to do. The best way to find out what it is, is to try it for yourself. It has excellent, smooth graphics and cute sounds. This program runs in both black and white and colour and runs under system 7. There are documentation files in English, French and German and two game applications, one for colour and one for black and white. *Double Density Disk.*

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PLEASE READ BEFORE BUYING

MacUser is unable to guarantee that the MacPremierware advertised will always work as intended with every machine and configuration available. System 7 has made the situation even more problematic, so from time to time we will be introducing disks that are specifically suited to the new system. In general, we are happy to swap disks for other choices in circumstances where genuine difficulties have occurred.

REGISTRATION MATTERS

Some of the software included in MacPremierware is public domain (and therefore free) and some is shareware. Shareware is unique in that it allows you to try before buying. Registration costs, due to the authors of the software, are usually a fraction of comparable commercial software and they also entitle you to documentation,

user support and upgrades. Pay your dues and everyone benefits.

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All the disks have been checked for System 7.0 compatibility, and compatibility with the following Macintosh models: LC, SE, IIsi and Quadra 700. Any that are more prone to compatibility problems (i.e. games and INITs/CDEVs,) have also been tested on the Classic and Ili. Every program has a compatibility note placed in its "Get Info..." comments field. Where genuine difficulties have occurred, we are happy to swap disks for other choices.

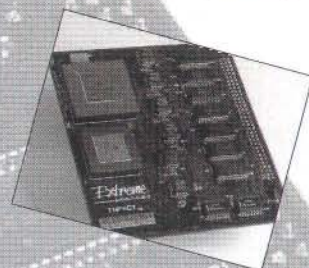
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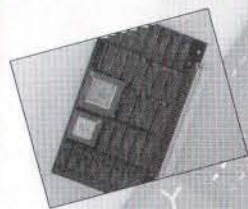
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By Chris Esther

Test Of Character

Optical character recognition can save you time, money, and the drudgery of inputting large amounts of text. But can it work miracles?

Photography by Jon Hamilton

Reports of the death of the paper-filled office have been greatly exaggerated. Most people still find themselves bombarded by printed documents of one kind or another, and the chore of getting this information into a computer can be time-consuming and tedious.

Optical character recognition (OCR) software promised to free us from this drudgery by reading scanned documents and translating the image into an editable format. But to many people, the experience of OCR has been a broken promise: great expectations pumped up by such sleight of hand statistics and the marketing people's sizzle. This is a shame, as OCR like so many advertised 'next big things' of their time has a lot to offer. Used in the right applications, OCR can save a lot of time, effort and money.

There are two commonly-held misconceptions about OCR. The first is that it's perfect. It's not. If you want to use OCR to save time and input large amounts of text that your fingers could

never contemplate typing, fine. But if you believe you won't have to check the results of OCR or correct a single mistake, think again. The second is a statistical reality check. The '99% accuracy rate' claimed in OCR advertisements really means around 40 errors in a 1000-word document. The difference between pure statistics and having to correct those mistakes yourself is not widely advertised by the OCR manufacturers.

Nevertheless, OCR has a lot to offer. The technology has advanced rapidly to include recognition of typeface characteristics, style, size and formatting. There are even Kanji and Arabic script OCR packages, and Newton will have cursive handwriting recognition.

Test Cases

For easy OCR and good results you'll need a 68030-based Mac, a minimum of 8M RAM and a good flatbed scanner. Additionally, Caere's OmniPage Professional, the most mature of the OCR packages we tested, ▶

Products Evaluated

AccuText 4.0
CatchWord Pro 1.0
OmniPage Direct 1.0
OmniPage Professional 2.1
Read-It Pro 3.0
TextPert 4.0
TypeReader 1.0

SPEED AND ACCURACY

TESTS

BUSINESS CORRESPONDENCE

A six-page business letter with a monospaced 'typewriter' style font. The print on the original was quite heavy.

MAGAZINE PAGES

Five pages from MacUser with three faces in a variety of weights and styles.

FAX MODEM

A one-page fax sent to a fax modem at standard quality. This is a multiple-column page with graphics which we converted to a TIFF format.

CONVENTIONAL FAX

A four-page standard quality fax. The pages include one sans serif typeface. The page has columns and graphics.

EXCEL SPREADSHEET

A four-column Excel spreadsheet printed in sans serif and serif typefaces with a grid completely surrounding the text.

PHOTOCOPY

A very light photocopy of a two-page business letter. It uses a serif typeface with the finer details of the text characters disappearing.

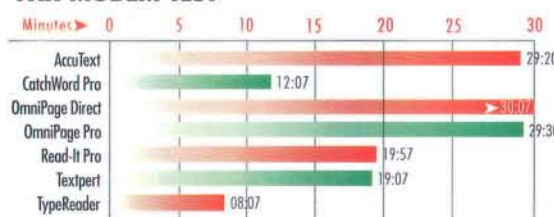
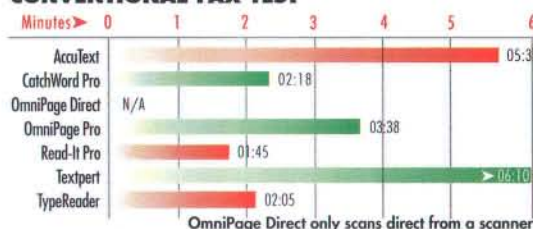
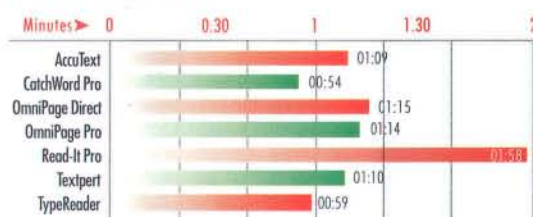
We asked the OCR software to read six different documents, ranging from two to six pages in length and covering the type of material that users will want to input electronically. Standard serif and sans serif typefaces were predominantly used with very few display faces in sizes from 7pt through to 48pt. Text styles were generally of the kind found in most business communications and publications.

For the general testing we used a range of equipment, including a Mac IIfx 20/200, a Quadra 800 16/460, an Apple OneScanner and Microtek's II XE colour scanner. All

applications were run in memory partitions of 10M under System 7.1 with no other applications running, except when testing OmniPage Direct.

All applications, excluding OmniPage Direct, were tested using the same saved TIFF images. Originals were scanned using Ofoto 1.1.1 at 300dpi and saved uncompressed. As OmniPage Direct doesn't support TIFF files it was tested using the Microtek scanner with the scanned text being directly "input" into Microsoft Word 5.1.

Timings represent the recognition phase only, but as we

BUSINESS CORRESPONDENCE TEST**MAGAZINE PAGES TEST****FAX MODEM TEST****CONVENTIONAL FAX TEST****EXCEL SPREADSHEET TEST****PHOTOCOPY TEST**

refuses to run on anything less than System 7.

We also tested the immediate response version of the Omni family, OmniPage Direct, which is used like a desk accessory to 'type' directly into other applications. CatchWord Pro often comes with Logitech's hand-held ScanMan scanner, creating a product similar to Caere's Typist. However, unlike Caere's Typist, it is a software-only product and supports the standard range of flatbed scanners. Read-It Pro 3.0, the latest version of Olduvai's venerable OCR product, Xerox's AccuText, TextPert 4.0 and TypeReader 1.0, the latest contender to appear within the OCR market, were also tested. Despite having two respected OCR solutions (WordScan and WordScan Plus), Calera is easing back from the Mac market, and we felt it inappropriate to test these products.

A number of fax modem manufacturers, including PSI, are currently bundling OCR software using Calera's WordScan engine with their fax modems. Most of the OCR packages reviewed here can attempt to recognise material received by fax modem, although the low resolution of a standard fax, compounded by the differing resolution as-

pects (200dpi by 100dpi), can make these OCR adventures frustrating and unproductive.

Usually, fax files have to be converted to the TIFF image format before they can be used by OCR software. TIFF files provide the standard input method for OCR when a scanner is not directly connected or immediately being used.

All the packages, except OmniPage Direct, recognise TIFF files, and most provide a method for reading various separate files as one job. This allows big projects to be split into distinct and more productive stages, and provides better management of human and hardware resources.

The OCR packages we looked at support a variety of scanning devices, including those from big name manufacturers such as Agfa, Microtek, Apple and HP. At the lower end of the scanning spectrum, only CatchWord Pro and Read-It support hand-held scanners for direct connection.

Scanning Stages

Using an OCR package can be a simple matter of putting the paper onto the scanner's glass and clicking a button. Auto intensity scanners such as

used the batch job capabilities of OmniPage Pro, TypeReader and AccuText, these figures include varying amounts of overhead in loading the TIFF images. Speed of recognition is only one part of the whole OCR process, with scanning, selecting zones for recognition and proofing taking a long time. Accuracy is generally more important than speed so the speed quoted in these tests should be used as a general guideline, not the major basis for decision making. It's better to look at the combined attributes of recognition speed and quality of each package.

Accuracy has been measured in two ways. On a character by character basis, which the manufacturers use in their calculations of percentage correct. Since errors are usually corrected on a word by word basis using either an OCR package's proofing mechanism or spell checker, we have measured accuracy by using each word as a unit. Overall, our tests were quite punishing. However we were not just testing the individual products but also the current boundaries of viability for software-only OCR on the Mac.

BUSINESS CORRESPONDENCE TEST

	Character Errors	Word Errors	Character %	Word %
AccuText	34	16	99.61	98.57
CatchWord Pro	73	40	99.16	96.43
OmniPage Direct	37	22	99.58	98.03
OmniPage Pro	26	20	99.70	98.21
Read-It Pro	74	44	99.15	96.07
TextPert	31	26	99.65	97.68
TypeReader	10	8	99.89	99.29
Total number	8735	1119		

CONVENTIONAL FAX TEST

	Character Errors	Word Errors	Character %	Word %
	311	153	95.65	86.15
	728	376	89.82	65.97
	624	339	91.27	69.32
	654	370	90.85	66.52
	600	322	91.61	70.86
	206	154	97.12	86.06
	26	81	98.24	92.67
	7148	1105		

MAGAZINE PAGES TEST

	Character Errors	Word Errors	Character %	Word %
AccuText	96	54	99.41	97.97
CatchWord Pro	468	345	97.12	87.05
OmniPage Direct	250	225	98.46	91.56
OmniPage Pro	143	88	99.12	96.70
Read-It Pro	304	224	98.13	91.59
TextPert	221	176	98.64	93.40
TypeReader	58	42	99.64	98.42
Total number	16233	2665		

EXCEL SPREADSHEET TEST

	Character Errors	Word Errors	Character %	Word %
	37	21	97.54	94.35
	278	144	81.50	61.29
	15	9	99.00	97.58
	90	59	94.01	84.14
	N/A	N/A	N/A	N/A
	69	48	95.41	87.10
	84	42	94.41	88.71
	1503	372		

FAX MODEM TEST

	Character Errors	Word Errors	Character %	Word %
AccuText	103	50	95.67	87.56
CatchWord Pro	332	171	86.06	57.46
OmniPage Direct	N/A	N/A	N/A	N/A
OmniPage Pro	182	114	92.36	71.64
Read-It Pro	292	160	87.74	60.20
TextPert	173	126	92.73	68.66
TypeReader	54	37	97.73	90.80
Total number	2381	402		

PHOTOCOPY TEST

	Character Errors	Word Errors	Character %	Word %
	43	20	96.55	89.64
	75	39	93.99	79.79
	42	22	96.63	88.60
	47	35	96.23	81.87
	99	42	92.07	78.24
	31	31	97.52	83.94
	14	5	98.88	97.41
	1248	193		

HP's with AccuPage automatically adjust the scan settings to get the optimal image for the OCR software. But for complex or poor-quality documents, you'll need to progress through the OCR process manually to get the best results.

Once a page has been scanned, you preview it to check the quality and make adjustments to get the crisp, completely-formed and separated characters that make for good OCR source material.

OCR packages will default to processing the entire page, where they decide which areas contain text or graphics. With the areas that it has identified as text, the OCR software works out how it flows, creating the links it will use to connect the separate columns. Often, however, this process can be improved if you specify this yourself by zoning areas with the rectangular selection tool and defining the flow of text from one column to another.

Some packages allow you to give more detailed instructions to the software by zoning different areas of the page which contain specifically numerical or textual characters. This decreases the number of errors caused by the similarities between some numbers and letters.

Most of the packages we looked at allow you to check through the scanned pages and correct wrongly identified letters with a spell checker. The most sophisticated of these proofing tools are found in TypeReader, which has a page layout-like editor, and OmniPage Professional, with its word processor module.

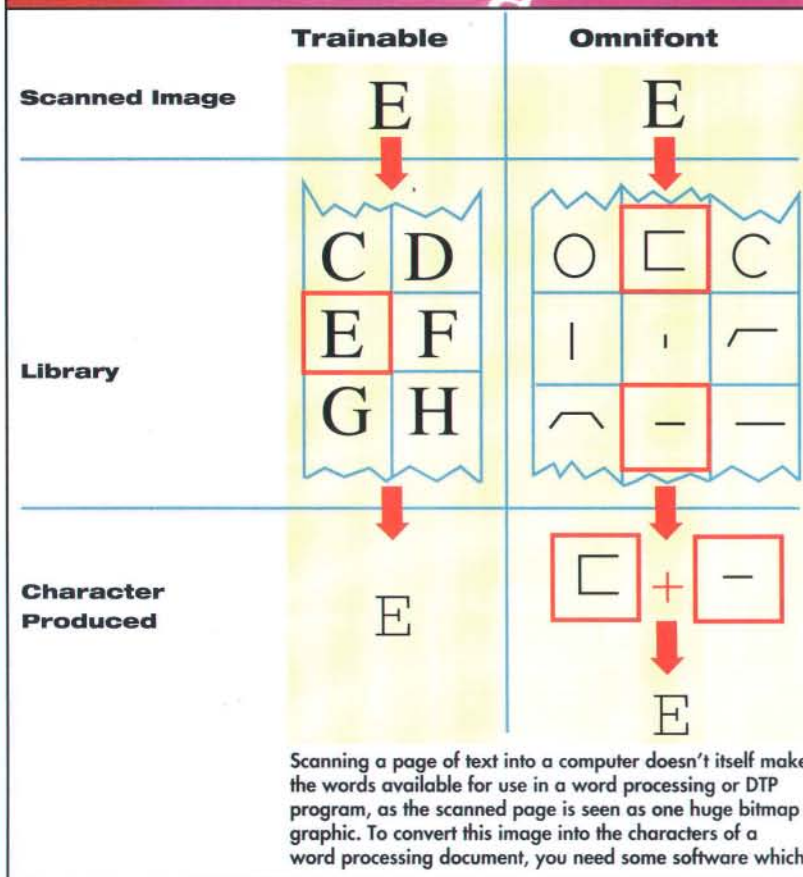
OmniPage Professional

OmniPage Professional sits at the top of Caere's range of three OCR solutions, and also provides some basic image editing capabilities.

The package was one of the easiest and most intuitive to set up, and provided consistent accuracy in recognition across our range of test material, with the exception of the lower-quality fax pages.

Creating OCR zones on complex page layouts is relatively easy when you realise that zones can't overlap. However, if you want to select awkwardly-shaped columns, you have to zoom in to create the selection areas. You can create custom zone selection types, adding to the standard numeric and alpha types, which allow better recognition of ▶

HOW OCR WORKS



allows optical character recognition. This software comes in varying degrees of smartness. Early OCR software needed quite a bit of help, and had to be taught each character of each typeface in order to recognise it at a later date. Teaching an OCR package is quite an investment in time, especially when each variation in size, weight and style is considered to be a separate typeface.

Trained OCR software compares individual stored bitmap images of what it knows with each character on the scanned page. This is known as matrix matching. As there is a variation of how a single character can be seen at this detailed level when scanned, it's generally recommended that the training files have at least seven examples for each character.

To train such software you preview the bitmap of each character and identify it for the benefit of the program. The program then stores it in a database for later comparison.

The need for considerable training meant early OCR software was only viable for those with large amounts of material in a range of typefaces, so that the investment in time could be justified.

Around 1988, omnifont technology became available for the Mac in the form of OmniPage. In theory, omnifont software can recognise any font without training as it uses feature extraction to recognise the component shapes of a character. This technique frees the OCR process from having to match the specific matrix of a font and size, as it uses the overall shape characteristics of an individual letter or numeral.

All the programs we tested use some variety of omnifont technology, and Read-It switches between modes to provide that or matrix matching recognition. OmniPage Professional and AccuText supplement their omnifont methodology with training files, while CTA offers a version of TextPert that includes a training mode.

- ◀ material containing a known and fixed number of characters, such as product part numbers.

OmniPage has a training mode which supplements the omnifont recognition. Best used for troublesome characters, fonts or symbols, it can replace them with actual words. For instance, when it spots the character '&', it replaces it with 'and'.

For proofing, OmniPage provides a complete word processing editor, which shows the recognised text fully styled. Correction of suspect words and characters is easy with the built-in spell checker.

AccuText 3.0

The latest version of Xerox's AccuText is relatively cheap, at £225, includes a training mode and is System 7 savvy. It produces good results, with only TypeReader beating it in our accuracy tests.

Unfortunately, it has no proofing editor. To see the general quality of the results, let alone proof them, you have to use a word processor. With AccuText you can only proof and correct as you go in the actual recognition process.

AccuText's verifier is a complicated and ultimately frustrating facility. It is interactive and ties you into a lengthy process that can't be interrupted without cancelling the entire OCR operation.

Selecting the zones for recognition can also be an agonising process, especially if you need to zoom in and specify a large number of zones, as each time a zone is created, modified or even selected, most of the screen is refreshed slowly.

TypeReader

We found TypeReader to be the easiest application to use. This is largely due to the floating Galley window which provides single-click access to the nuts and bolts functionality. With ideal original material and an auto intensity scanner, you would need to know one button – AutoStart. This will scan or read the image, create the selection zones and links for the columns, and then recognise and present the results for proofing in the text view.

Text view looks like the page layout view of Microsoft Word, except there are no tools available to alter the layout. Only the text can be modified for size, style and font.

To proof the recognised text, you tab through the document to pick up unrecognised or suspect characters which are highlighted for correction. The portion of the scanned image that contained the suspect text is shown in a mini window, as in OmniPage Professional, so you don't have to refer to the original document for verification.

The only major criticism of TypeReader is that it has no image rotation tools. This is especially annoying if you are using TIFF files, as you have to use an image processing application to rotate them.

CatchWord Pro

Marketed as an economy version of omnifont technology, CatchWord Pro is a cheap, simple-to-use package. It lacks a lot of the power tools others provide, but this makes it pleasantly uncluttered.

CatchWord doesn't recognise different typeface styles or sizes, although it can export the straight text out in a variety of word processing formats.

Bundled with its manufacturer's ScanMan hand-held scanner, it can stitch two pieces of text vertically back together after they have been scanned in two separate passes.

Although it can use flatbed scanners, CatchWord Pro is best suited for hand-held scanners and very simple and clear original material. It only provided satisfactory results on the simple monospaced test.

Read-It Pro

One of the oldest players in the OCR market, Read-It Pro is a relative newcomer to omnifont technology. It has two distinct modes of operation. Unlike, say, OmniPage Professional, where the training facility augments the omnifont recognition process, in Read-It, the two remain separate.

Of all the products we reviewed, it had the lowest system requirements, needing only a Mac Plus and 1M RAM. However, when using the automatic omnifont mode, the memory requirement jumps up to a more realistic 4M. In our testing we used automatic mode for day-to-day OCR, as the limitations imposed by manual training seem unrealistic.

Read-It Pro simply didn't cut it with anything less demanding than our simplest test, although, by training it, we saw accuracy results more like those of the other OCR packages. For situations where the other omnifont-focused packages can't do the business, then Read-It Pro could be the answer, as its distinct matrix-matching mode means it can be trained to recognise just about any font.

OmniPage Direct

Very similar to Caere's Typist software in operation, OmniPage Direct offers an immediate OCR input solution, with the recognised text being 'typed' directly into a target application such as a word processor.

The program acts like a desk accessory in that it is installed in the Apple menu and can be accessed from within most Mac applications. OmniPage Direct consumes a minimum of 2M, and to use it with anything beyond simple one-column pages, you would want to bump that up to 5M.

Scanning was very slow when using Caere's AnyPage auto intensity option, taking up to five minutes for a complete scan, so we felt it would be quicker to scan manually and adjust the settings.

Multiple page jobs, where each page layout is different, need to be specified to run as single pages, because the first custom zone selection is automatically used as a template for the others.

TextPert

Immediate impressions of TextPert were less than favourable, with a custom installer that kept saying the original disks were locked, a hardware protection device that was not mentioned in the

TYPICAL OCR MISTAKES



Recognition mistakes can be split into two types: those the OCR program tags as illegible and those it recognises incorrectly. With the former characters, OCR packages substitute a special marker – usually the bullet or tilde character. The latter type of recognition error is more frustrating, as it can only be detected by manually proofing the page or by using the spell checking facility in the OCR or word processing package.

Mistakes usually spring from a similarity in the basic shapes of some characters, such as "8" and "S". Others occur from the many permutations of lower and upper case letters and numerals. The problem is compounded when the image is degraded.

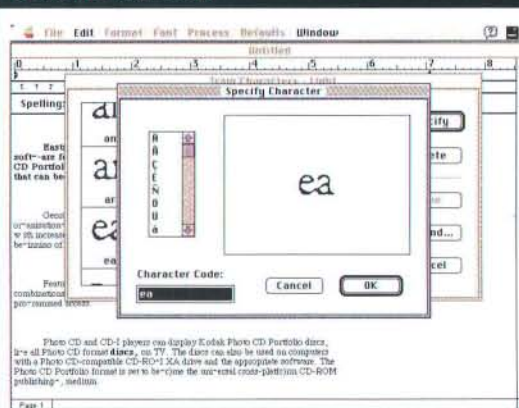
Some of the OCR packages use an on-

the-fly spell checking method to avoid this type of error. The lexical context of a suspect character is checked and the most appropriate match from the OCR's lexicon/spell checker is used. So, the recognised but suspect character "8" is checked in its context of "8top" and the more appropriate match of "S" is given.

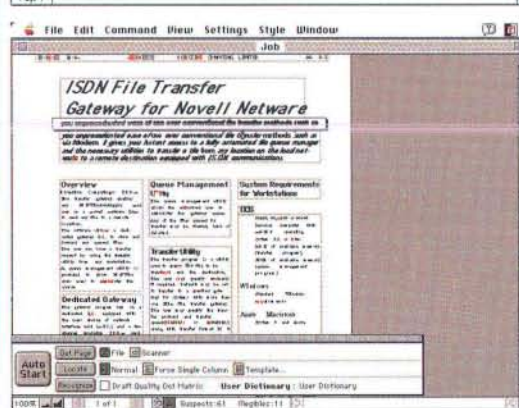
Programs that use human help in training them can sometimes be tuned to reduce the error rate. Other configuration options specific to individual packages can reduce mistakes, including the ability to manually select recognition zones to exclude unwanted areas of a page.

Basic common sense, like keeping the glass of the scanner clean and trying to scan material as straight as possible, also help to prevent errors.

OCR IN ACTION



OmniPage Professional: Non-standard characters or symbols can be taught to OmniPage Professional by using its supplementary training mode.



TypeReader: TypeReader's proofing tool shows the recognised text in a page layout display. The program's Auto Start feature allows you to scan the image, create zones and present the text in a window with one button press.

poor documentation and a manual supplement for an MS-DOS version. The lack of documentation on the hardware dongle is especially worrying, as it's only thanks to experience that we inserted it into the ADB port and knew what the Eve INIT which appeared in the Extension folder was.

TextPert's automatic zoning of pages almost always needed help, except, bizarrely, on the most complex. TextPert fell among the middle of the pack, with stronger results in the simple test and, surprisingly, with the fax modem test. TextPert is available with a high-speed hardware add-in board, which helps in the recognition

OCR PACKAGES COMPARED

	AccuText 3.0	CatchWord Pro 1.0	OmniPage Direct 1.0	OmniPage Professional 2.1	Read-It Pro 3.0	TextPert 4.0	TypeReader 1.0
Spell checking	Yes	No	No	Yes	No	No	Yes
Trainable	No	No	No	Yes	Yes	No	No
OmniFont	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Interactive proofing	Yes	No	No	Yes	Yes	No	Yes
Zone selection	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Scan preview	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Type style recognition	Yes	No	Yes	Yes	No	Yes	Yes
Publish & Subscribe	No	No	No	Yes	No	No	No
Apple Events	No	No	Core	Core	No	No	Required
Text output file formats	MacWrite, RTF, SYLK, ASCII, WordPerfect 1.0.2	ASCII, MacWrite, RTF, Word, WordPerfect	ASCII only	ASCII, MacWrite, RTF, Word, WordPerfect	Uses XTND for output	ASCII, MacWrite, RTF	ASCII, RTF, Word, WordPerfect, MacWrite, Excel, WriteNow
Zone templates	Yes	No	No	Yes	Yes	Yes	Yes
Background processing	Yes	No	No	Yes	Yes	Yes	Yes
System 7	Compatible	Compatible	Savvy (requires System 7)	Savvy (requires System 7)	Compatible	Compatible	Savvy
Rotation tools	No	No	No	No	Yes	Yes	No

process, though the software-only version was no snail compared to the other packages. Some useful output features allow TextPert to format the recognised text for specific applications, like importation into a database, as it can mark the start and end of each area and the end of each line.

The Price Of Accuracy

OCR differs from most kinds of software as errors in performance should be expected. Nevertheless, OCR packages pass or fail on their accuracy. To a certain extent, the price and speed of an OCR package is not important, as the time it takes to make up for inaccurate OCR software can easily outstrip cost or performance advantages.

ExperVision's TypeReader was the most accurate overall, and for this alone would deserve the best buy award. OmniPage Professional, OmniPage Direct and AccuText scored well, but TypeReader has an advantage – it is based on later technology and it showed, especially when processing difficult pages with text that joined or was breaking up.

TypeReader also leads the way on user interface design. For everyday use, all operations just in-

volve a mouse click on the Galley floating window, which offers most functionality in an intuitive way.

OmniPage Professional and AccuText were fairly close behind TypeReader in accuracy, with OmniPage Pro only really losing on degraded original material. AccuText's relatively low price and good accuracy results could make it a second best buy, but its strong points are undermined by its lack of an adequate proofing facility and a poor interface.

CatchWord Pro and Read-It Pro performed inadequately on any source material of less than optimal quality. Accuracy on simple and clear pages was reasonable. However, Read-It Pro can be trained to recognise typefaces and so could be the answer for fonts that are problematic for omnifont packages.

Depending on the type and quality of material you will be using, any of the OCR packages we tested could be appropriate. However, if you're serious about regularly using OCR, take a representative sample of the kind of material you'll want to input to your local dealer and check out the results in person. Be clear what you want from OCR and don't expect magic.

FINAL REPORT

AccuText 4.0



Good value for money with strong recognition results, but let down by some awkward interface details and a lack of a post-recognition proofing facility.

Manufacturer Xerox Imaging Systems
Price £225
UK distributor Xerox 0734 668421

CatchWord Pro 1.0



Low-end package which provides viable results only with good quality originals.

Manufacturer Logitech
Price £199
UK distributor Logitech 0344 891313

OmniPage Direct 1.0



Brings immediate OCR to any application by allowing direct scanning and conversion. Relies on the target application for proofing tools.

Manufacturer Caere Corporation
Price £450
UK distributor Computers Unlimited 081 200 8282

OmniPage Professional 2.1



Solid product with a long and strong pedigree. Has a particularly good verification word processor with spell checker.

Manufacturer Caere Corporation
Price £795
UK distributor Computers Unlimited 081 200 8282

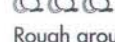
Read-It Pro 3.0



A good trainable product for difficult fonts. Automatic mode recognition lets it down, though.

Manufacturer Olduvai
Price £395
UK distributor Sofline 081 401 1234

TextPert 4.0



Rough around the edges. Part of a larger family of OCR products including Arabic and hardware-based solutions.

Manufacturer Ciencia Tecnología Aplicada (CTA)
US price \$995
Distributor CTA 010 343 485 0410

TypeReader 1.0



Excellent all-round performer. The Galley floating palette provides quick and easy use of this accurate package.

Manufacturer ExperVision
Price £595
UK distributor Computers Unlimited 081 200 8282

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Microtek Scanmaker II.....£775
Microtek Scanmaker IIX.....£950
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Epson GT8000 800dpi (800dpi Colour).....£1125

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Help!

Edited by Julian Torreggiani


Mac Solutions

Peter Jackson opens the Mac surgery.

Slothful Printer

 My Performa 600CD takes up to five minutes to print a document on an HP LaserJet 4M, and background printing is out because it takes all day. My wife, who also works from home, can print out on an HP LaserJet IIP within 10 seconds, using an ancient IBM PS/1. All connections are by the book, so where did I go wrong?

H John Biskupski, Richmond

 I'm afraid you haven't gone wrong at all. Your wife can print at speed on the LaserJet IIP because this is not a PostScript printer and because it is a low-resolution device. Your printing is slow – even though the Performa 600CD is a lot faster than the ordinary IBM PS/1 – because the LaserJet 4M is a high-resolution PostScript printer. When it prints on the 4M, the Mac sends a PostScript program to the printer, which must then run the program and produce the final page image. When the PS/1 prints on the LaserJet IIP, it is just sending a stream of characters which the printer places on the page image in memory.


You have to be careful to compare like with like, however. If the Mac is printing plain text, then the delay should occur only on the first page, with later pages coming out much faster. In contrast, if the IIP is asked to print text in unusual fonts with combined graphics, then you will have to wait a lot longer than 10 seconds.

And, of course, the LaserJet 4M has a resolution of 600 dots per inch (dpi) with additional resolution enhancement pro-


cessing, while the IIP prints at 300dpi with no enhancement. Creating a full page of graphics on the 4M involves specifying four times as many dots as the IIP, with enhancement processing on top.

There is no doubt that for printing text with built-in fonts and no graphics, the IIP and PS/1 will win easily. But for more complex mixed text-and-graphics printing using a variety of fonts at a higher final print resolution, the 4M will do the job better, even if it is at a slower speed.

Mutated Icons

 I have a Performa 200 4/40, and all my icons for applications and files have changed from specific ones to plain ones. The ClarisWorks icon has stayed the same, but that was already installed when I got the machine.


James Coutts, Edinburgh.

 If anything odd happens to lots of icons on the screen, then it is always worth trying to rebuild the desktop file that the Mac uses to keep track of icons and windows and their positions. Select Restart from the Finder's Special menu, and hold down the option and command keys while the system restarts. You should be presented with an option to rebuild the desktop file, which you should OK. After a while, your machine will boot normally and your icons should be restored.


If this does not do the trick, then the next step is to re-install the System software. If that fails, you'll have to re-format the hard disk and then re-install the system. You don't

want to do either of these, believe me, so I hope that the desktop rebuild does the job.

Photo Jargon

 I am confused about the relationship between scanning resolutions, printer resolutions and photo screen densities when reproducing photographs on ordinary office printers. I understand that 150 lines per inch (lpi) is a high-quality screen for photographs, so will a 600dpi scanner and printer reproduce good quality photographs?

Peter Phillips, Redhill

 The confusion is natural, because the traditional printing industry and the computer industry are talking different languages when it comes to grey-scale printing like photographs.

Taking it from the computer side first, consider what a simple 600dpi printer does. It can print 360,000 dots per square inch of a page, but each dot must be either black or not black – in a simple printer a single dot can't be a shade of grey. So, if a 600dpi printer is to produce an image with 16 shades of grey, it has to 'dither' the image. It divides the picture into 'cells' measuring four dots on a side, and produces greys by filling in different combinations of dots in each cell.

A 600dpi printer printing 16 shades of grey is actually printing at a real resolution of 150dpi. And the more shades of grey you want to print, the lower the effective resolution – for 256 shades, you would need 16 by 16 cells, reducing the printer's effective resolution to a shade less than 40dpi.

For scanners, the problem is a different one. A 600dpi scanner can store grey-scale information about each dot it scans, whether this can be shown on the screen or printed. If it scans in 256 shades of grey, then each dot has a number describing one of these shades. Unfortunately, unless you have an output device 10 times better than a typesetter in terms of resolution, you will never see this amount of detail.

There is a lot more to this, particularly when it comes to techniques like Apple's PhotoGrade, specifically de-

signed to improve grey-scale printing. But the rule of thumb is that more greys means less print resolution, and that computer printers generally lack the variety of dot size that makes 150lpi acceptable for newspaper photographs. I would suggest that a print resolution of 150dpi on a 600dpi printer will produce decent grey-scale images, although 75dpi might actually be better because the human eye tends to translate more shades into higher perceived resolution.

Plotting Against Apple

 I have a 1986 vintage A3 Apple plotter, which is now malfunctioning with slight displacement of lines, and fills increasing as plotting proceeds. My Apple dealer says no technical information is available and it can't help. But I did hear that the plotter, which was a short-lived Apple product, was a rebadged Hewlett-Packard model. I would hate to think that six-year-old equipment has been abandoned with no hope of repair.

Paul Cross, Grantham

 The first step is to ring Apple UK (081 569 1199) and ask for the Customer Relations Department. Explain your problem and see what happens: under EC law, companies must continue to stock spare parts and otherwise support products for seven years from launch. If it turns out that the plotter really is a Hewlett-Packard model, then try Hewlett-Packard UK (0344 369222). This company has an excellent record in technical support, and should be able to supply you with information if not a repair. However, a product with an Apple logo is, ultimately, Apple's responsibility, no matter for how long it has been used.


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Every reader who has their question answered will receive a disk from the MacUser Premierware (see Contents, p5) collection of shareware. Specify which disk you want and send your questions to: MacUser Mac Solutions, 19 Bolsover Street, London W1P 7HJ.

Hints And Tips

Get the most out of your Mac. **Peter Jackson** compiles readers' tricks and shortcuts.

Graphics By Mail

 "It is widely thought that only text files can be sent over electronic mail and Internet," explains Dave Rose, of the Department of Psychology, University of Surrey. "However, it is possible to send graphics files, applications and even QuickTime movies. The secret is to encode the file in BinHex format before you send it, which you can do in StuffIt 1.5.1 and other programs. Any file can be encoded and sent in this way, although it is a good idea to compress large files first!"

Those using services like CIX have no trouble sending various file types already, but that is because they are using 8-bit communications protocols. Many email systems, like the old Telecom Gold, only allow 7-bit ASCII character codes, which makes sending anything other than text impossible. The BinHex format – which usually adds '.hqx' to file names – encodes 8-bit data in 7-bit form for transmission over such systems.

Incidentally, it is also useful for transferring files from a PC to a Mac. A BinHex file can be downloaded on a PC, transferred to a Mac on floppy disk, and then decoded and used without any of the usual resource fork problems.


Organised Menus

 "I have a tip about a piece of shareware called BeHierarchic, included on your subscription disks," writes Scott Koterbay, from St Andrews. "The notes that come with the program are a bit vague, but if you make an alias of your hard disk and drop it into the Apple Menu Items folder, you can have complete access to everything on your disk without having to open up a million Finder windows. Little arrows on pop-up menus point the direction to easy access. Also, if you combine BeHierarchic with another shareware package called Automenus, the Finder is easier to use."

It is worth remembering when trying this method that


there is a limit to the number of hierarchical menus that BeHierarchic can display, so the contents of very deeply nested folders might still be inaccessible in this way.

Aligning Text In XPress

 David Everitt, of Melton Mowbray, has a simple technique for exactly aligning two separate text items to the left and right edges of a paragraph in QuarkXPress 3.1. "To perform this simple task in XPress 3.0 you had to laboriously place a right tab at the end of the left-ranged paragraph, but version 3.1 has a better method. First, set the paragraph alignment to range right. Type in the two items, separating them with a tab. The first tab entered will force the left-hand item right over to the left edge of the paragraph. This technique is invaluable when, for instance, compiling lists where there are only two items on each line which need to be flush with the left and right edges of the paragraph."


"The tab will not appear in the tabs dialog box, presumably because it does not require an exact input. The default in a right-ranged paragraph is to force all text on the left of the tab to align with the left indent of that paragraph. If you change the paragraph indents, the text will realign."

Quick Reprint

 Graham Tyers, of Oakham, has a tip for those who reprint documents regularly.



"When you print a document using background printing, make a copy of the spool file that appears in the Print Monitor Documents folder in the System folder. To print this document again, option-drag it into the Print Monitor Documents folder and it will print instantly, although you may have to click OK in a dialog box, depending on your printer. This method will print documents from hefty applications in a fraction of the time taken to launch the application and then spool the file. The down-side is that the spool files take up a lot of space, especially if pictures or other graphics are included."

Frog Alphabet

 Frances Underwood, of Great Missenden, wishes to put the razorback record straight. "It is clear that Michael Kennedy (Vol 9 No 12, 11 June 1993, p76), who objected to the phrase 'how razorback jumping frogs can level six piqued gymnasts' has never had proper keyboard training, or he would not attempt to change it to a random piece of poetry. Every secretary learns to type 'the quick brown fox jumps over the lazy dog', as this uses every letter of the alphabet. The phrase in question has similar qualities, and when wishing to see the effects of a font, it is surely better to see the whole alphabet. It is useful to know how to get rid of an irritating phrase, but important to substitute a phrase of similar value."

The question is whether we need to see the entire alphabet in a given font before realising whether it would fill a particular need or not.

Halftones Fit To Copy

 "Apple LaserWriters with PhotoGrade produce a reasonable grey-scale image, which is fine until you want to photocopy the printer output," writes John Johnson of Wokingham. "Most photocopiers do not reproduce grey-scale images too well. This can be improved by setting the LaserWriter to print halftone dots rather than a grey-scale image. In the LaserWriter Utility, choose Set PhotoGrade from the Utilities menu. Move the setting to the far left (More Levels of Grey) and click OK. The printer will now produce halftone dots that can be photocopied successfully." 

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MacUser has updated the Absolute Beginner's Guide to cover System 7.0, and to include even more entry-level information than the first version. The guide provides step-by-step advice on everything you need to know about getting started on your Mac, from unpacking and setting it up through a tour round the desktop to a host of 'party tricks' to help you get the most out of your new machine. It is divided into the following quick reference tutorials:

- The First Ten Minutes – setting up, switching on, using a program, closing down the Mac.
- System 7.0 Finder – a tour around the System 7.0 desktop.
- The Next Seven Days – organising folders and files, exchanging information between programs, saving, printing, and much more.
- Party Tricks – getting more from your Mac with Control Panels, fonts, sounds, and other Mac goodies.
- From Here On In – what to read and do next.

How To Get It

The Absolute Beginner's Guide is available free to MacUser readers. Simply send an A4 stamped (38p postage) addressed envelope to: Absolute Beginner's Guide, Computer Mailing Services, PO Box 249, London WC2H 0HS. Write Beginner's Guide in the bottom left hand corner of the SAE. (Please send an SAE for each requested copy.)



**System 7.0
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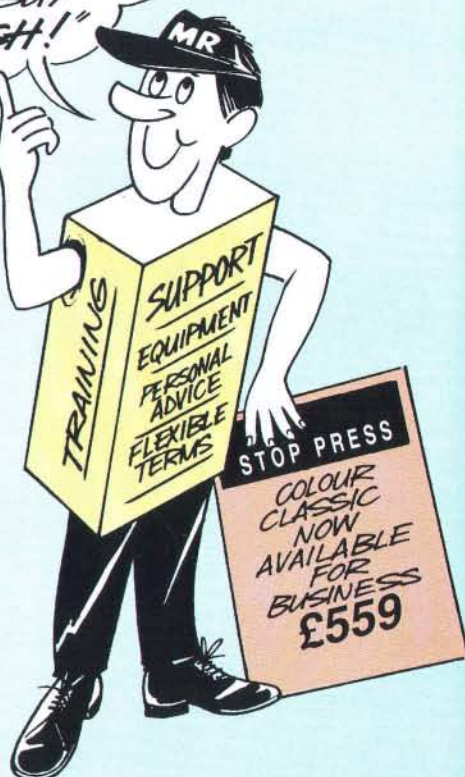
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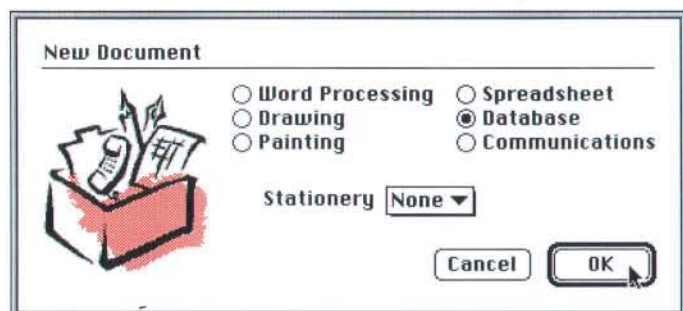
MacTricks Mailmerge In ClarisWorks

One of the most traditional uses of the office word processor, and traditionally one of the biggest pains, is mailmerging. This involves taking a list of names, addresses, and other details from a mailing list-type database and inserting it into the desired spaces in a standard

letter of some description. Most word processors include a mailmerge facility, but I find the one in ClarisWorks the easiest to use. It may not be as smart as, say, Word, but it should prove robust enough for most beginner-to-intermediate Mac users.

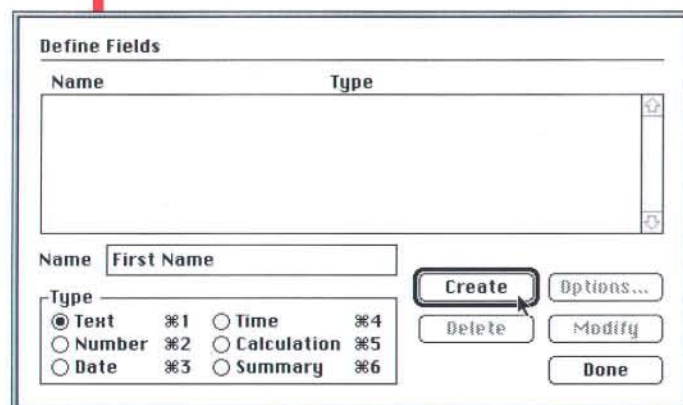


Richard Dyce is a former technical editor of *MacUser*. His first book, *Journeys Through Word 5.1*, is published by Addison-Wesley. He is currently technical manager at Instant Access International.



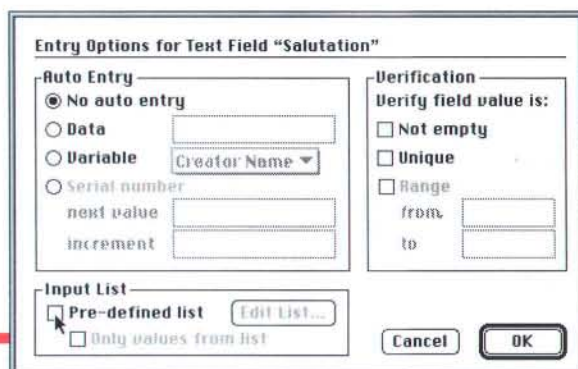
1 New Document

When you first start up ClarisWorks, it asks you what sort of document you want to produce. To start with, we'll need a database document, so select the Database button, and click OK.



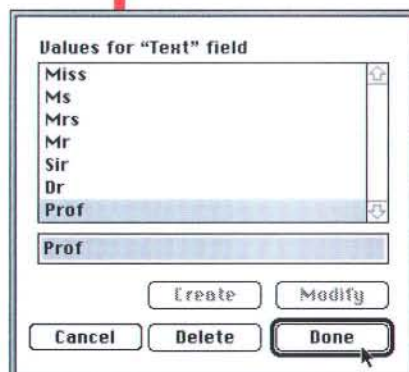
2 Define The Field

When you create a new database, ClarisWorks begins by asking you what sort of information you want to store. Once you've set up this bit correctly, almost all the real work is done. Information is stored in boxes called fields – you give each field a name, decide what type of information it ought to contain, and ClarisWorks does the rest. To start with, type First Name, click the Text button, and click Create. This tells ClarisWorks that the first piece of information that you want to store is a piece of text called First Name. ClarisWorks puts it in the list of fields at the top of the dialog.



3 Field Entry

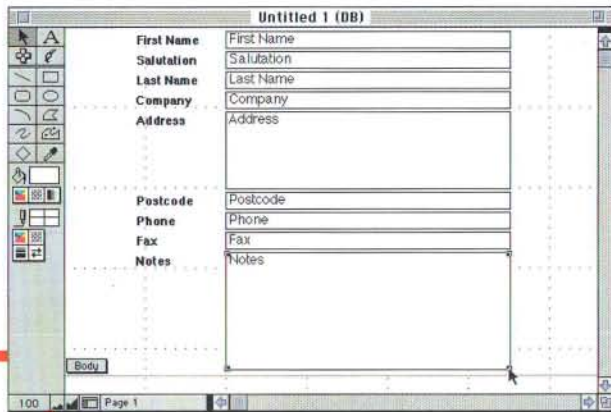
Now type Salutation. Click the Text button, and click Create. (Since all our fields are going to be text fields, you don't really need to keep clicking the Text button. However, if you were going to be using numbers or dates, then you would have to select the relevant button for your field before clicking the Create button.) Again, ClarisWorks adds it to the list of fields. Notice that it is highlighted, as it's the last field that you've created, and that the Options button is no longer greyed out. With the Salutation still highlighted, click the Options button. You should now be faced with a slightly more complicated looking Entry Options for Text Field "Salutation" dialog. Just click the Pre-defined list checkbox in the bottom left-hand corner.



4 Predefined List

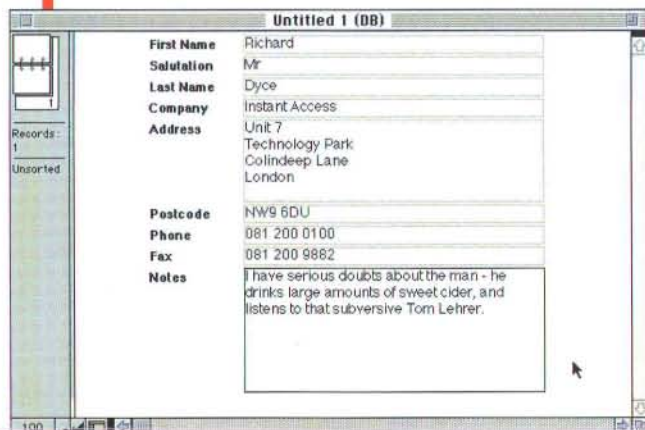
Now you should find yourself in the Values for "Text" field dialog. This is where we really want to be. This dialog allows you to define a set of possible values for a field. In this case, as the field is Salutation, the values that would be useful to have are Miss, Ms, Mrs, Mr, Sir, Dr, Prof, and so on. Type each value in turn and click Create

after each one. When you've finished, click Done to go back to the Entry Options dialog and then OK to take you back to the Define Fields dialog. You can now complete the field definitions for your database. The remaining fields that you'll need are Last Name, Company, Address, Postcode, Phone, Fax, and Notes. Type each one in turn, and then click the Create button. When you've finished, click OK.



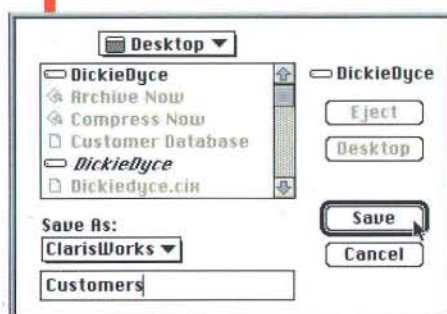
5 Layout

Most of the hard work has been done. From here on, it's all "creative" stuff. ClarisWorks now takes you to the Browse mode in the database. Unfortunately, that's not where you want to be, so choose Layout from the Layout menu. Just a little cosmetic surgery to do here. Click in the bottom left-hand corner and drag up until you've selected the bottom four labels and field boxes (Postcode, Phone, Fax, and Notes). Click on one of the selected labels and drag down. You should find that the other selected labels and boxes move with it. Move them down about half an inch. Now click on the bottom right-hand corner of the Address box and drag down. The box should change shape. Resize it so that it fits into the new space that you created by moving the other boxes. Now resize the Notes field along similar lines. That's the design finished. To enter data choose Browse from the Layout menu.



6 A Typical Entry

Now fill in some of the fields with names and addresses. The first entry should be fairly easy. (As a matter of taste, I suggest you don't use the macrocephalic apostate in the example here). Notice that you can press tab to move to the next field, and that when it comes to the Salutation field you are given the list of values that you created earlier to choose from. Double-click on the one you want. To add further entries, choose New Record from the Edit menu. (Each person's details are grouped together in records.) Add four or five records.

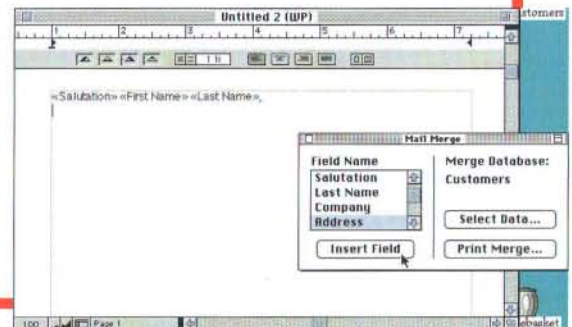
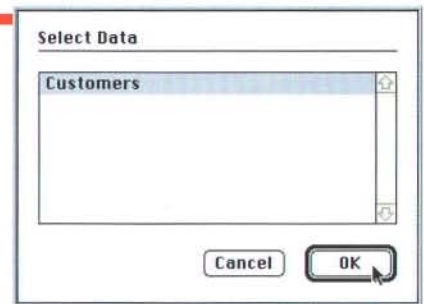


7 Save The Database

One of the most important stages in creating any document is, of course, saving it. Save the database as Customers, but don't close it yet.

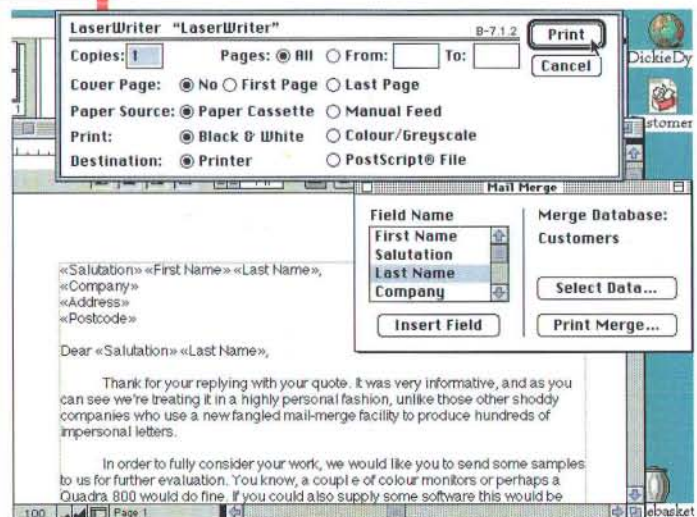
8 Selecting Customers

This is the clever bit. Choose New from the File menu, and click the Word Processing button. Now click OK. ClarisWorks creates a new word processing document for you. Choose Mailmerge from the File menu. You should now have a dialog called Select Data on your screen. This is asking for a database document to take the mailmerge data from. Because the Customers database is still open, that's the only database document you should be able to see. With Customers highlighted, click OK.



9 Adding Merge Fields

On your screen you should now see, as well as your word processing window, a palette called Mail Merge. Listed in the palette are the fields that you created earlier within the database. Click on the Salutation field to highlight it and then click the Insert Field button. ClarisWorks types the magic word «Salutation» into your document. Now type a space, and click on First Name in the field list, and click the Insert Field button. Type a space and insert the Last Name field. Now type return and add the Company field. Then, on consecutive lines, add the Address and Postcode fields. Now type your letter as you would normally. (If you want you can start it with Dear «Salutation» «Last Name».)



10 Printing The Mailmerge

When you're happy with your letter, click the Print Merge button. You should now get the standard print dialog box. Click Print, and voilà. To be more selective about the list of recipients of your wonderful letter, go to the Customer window, and do a Find. For example, if you wanted to send letters to people living in the W1 postal district, find W1 in the Postcode field, switch to the mailmerge letter window, and click the Print Merge button.



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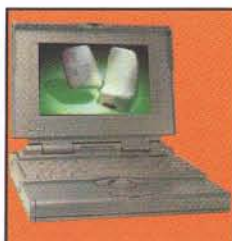
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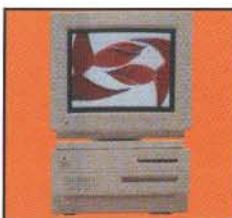
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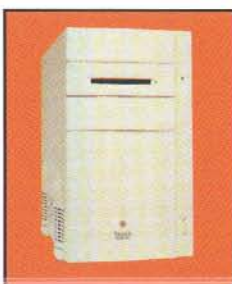
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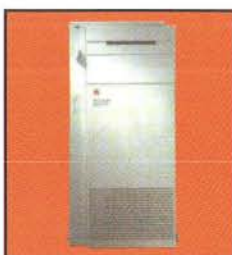
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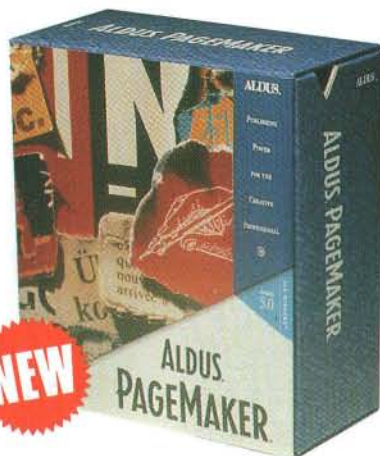
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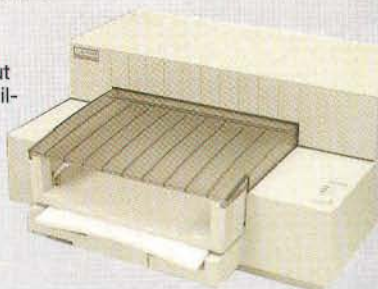


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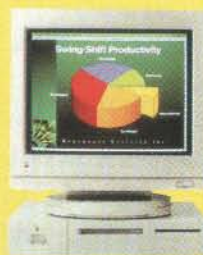
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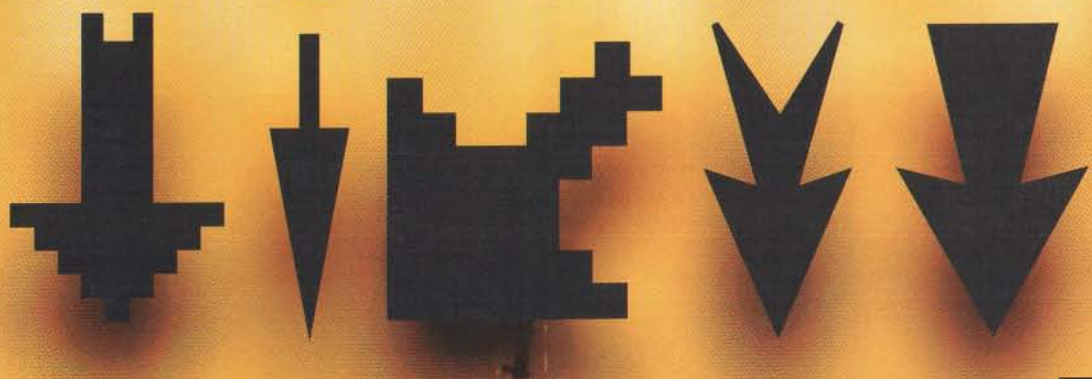
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● Use MacFinder to locate the companies advertising the products that interest you.

● Check the advertisements carefully, particularly the small print. VAT isn't usually included in the advertised price, and disclaimers such as 'E&EO' (errors and omissions excepted) mean the advertiser can disclaim responsibility for the content of the advert.

● Some of the products advertised in *MacUser* have been obtained from abroad or from unauthorised sources. *MacUser* advises readers contemplating mail order of Mac equipment and/or related software to enquire whether the products are entirely suitable for use in the UK. (A US-sourced word processor, for example, will have an American-style spell checker.) It is also important to make sure adequate service and back-up arrangements are guaranteed, because authorised outlets are unlikely to take on the after-sales problems of products purchased from other sources.

● Feel free to quiz a company about how long it has been trading and whether it can supply customer testimonials.

● Be an informed customer – understand your rights and always try to 'read between the lines'.

When You Buy

● Phone the supplier before ordering to check prices and availability of products.

● If a supplier displays or advertises a lower price on a product than they actually charge for it, they are committing an offence under the Trade Descriptions Act 1968. If you see an advert that is seriously misleading, contact your local trading standards officer.

● If you've ordered by phone or fax, post confirmation of your order, and keep a copy for yourself.

● Pay by personal credit card where possible because many companies have their own insurance. And, for items over £100, both the credit card company and the supplier are liable if goods are defective.

● Avoid paying for goods in advance. If the supplier agrees not to charge you until it has despatched the goods, confirm this in writing. If the supplier breaks the agreement, it is in breach of contract and you should immediately tell the credit card company that the card number has been used without your consent.

● If you do pay by cash, insist on a receipt showing the company's full name and address.

● Businesses are not covered by MOPS (see box, right). Often company credit card schemes do not offer the same purchasing insurance as private credit card accounts. For both these reasons, you should take care that your choice of payment is consistent with your normal company policy, and take care to check the credentials of the company you're buying from.

● Ensure the supplier has specified, preferably in writing, the service and support it can offer. Make sure you know exactly how much this will cost.

MacShopper is the Mac consumer's first step to buying wisely and safely. Incorporating The MacUser Buyers' Guide, MacFinder and MacUser's "yellow pages" listings and advertisements, MacShopper advises you on which Mac products to buy, how much to pay for them and where to buy them.

STOP! Before you shop... Follow MacShopper's advice for better buying

When Products Arrive

● Check that everything you've ordered is there, and that it works. If there's any problem, contact the supplier immediately.

● Fill in any registration documents that come with the software – this entitles you to upgrade information.

What To Do If Things Go Wrong

● Always complain to the supplier, not the manufacturer – by law, the supplier is responsible for the goods. Be firm but diplomatic. Send any correspondence by recorded delivery/registered post or by fax, and keep a copy.

● Your rights are not affected when any guarantee runs out because a guarantee comes in addition to your legal rights under the Sale of Goods Act 1979. This states that once a seller has accepted your offer to buy, a legally enforceable contract has been made, giving both parties certain rights and obligations.

Late Delivery

● If a supplier agrees to deliver goods within an agreed period or by a given date, it is legally bound to have the goods ready for you by that date. If it fails to deliver, you have the right to cancel the order and ask for your money back. You can also sue for compensation if you were forced to spend more money as a result of not receiving the goods on time.

Insolvency And Bankruptcy

● If you've made a private purchase by cash or cheque, you may be able to claim compensation under MOPS (see box, below).

● Contact your local Trading Standards Office or the Advertising Standards Authority.

● If you can prove wrongful trading or fraudulent or negligent misrepresentation, covered under the Misrepresentation Act 1967, you can get compensation – if you're prepared to go to court.

Mail Order Protection

● Some large companies are members of MOTA, the Mail Order Traders Association, which provides a code for prompt delivery dates, the return of unwanted goods, servicing agreements, complaints, and so on.

● *MacUser* is a member of MOPS, the Mail Order Protection Scheme that provides some protection if you send off money for goods to an advertiser who goes into liquidation or bankruptcy before dispatching your goods.

MacUser undertakes to meet valid claims from readers as soon as possible after an advertiser has become subject to bankruptcy proceedings or gone into liquidation, up to a limit of £24,950 for any one advertiser, and up to a maximum of £74,850 a year in respect of all advertisers.

This guarantee covers only advance payments sent in direct response to an advertisement in *MacUser*. It includes all display advertisements, but not loose inserts or reader classifieds. The above undertaking applies only to orders placed by private individuals – company transactions are not included.

To make a claim, you should write to *MacUser's* publisher no earlier than 28 days and no later than 90 days after publication of the edition concerned. Give full details of both the company involved, the purchases, and include proof of payment.

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Foxbase+	279
Lotus 123	245
Microsoft Excel	225
MacDraw Pro	245
QuarkXpress 3.11	515
PageMaker 5	459
Claris Works	149
MacTools	79
System 7.1	49
QuickTime 1.5	99

CALL FOR SOFTWARE NOT LISTED

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Calcomp CCL600 A3/4	2679
600dpi, 16Mb	
Canon BJC-820 A3/4	1495
Colour InkJet	
DECLaser 1152, 2Mb	789
HP-4M (600dpi) 6Mb	1469
HP DeskWriter 550c	519
HP 1200c Postscript	1539
QMS 420 (600dpi) 6Mb	1289
QMS 860 (600dpi) A3/4	3295
Star LS-5 TT, 2Mb	789

Scanners

Epson 6500 Photo, Light	695
Epson 6500 Photo, Full	895
MicroTek II Photo, Light	695
MicroTek II XE Photo, Full	895

Accelerators

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Daystar Turbo 040/33	1095
Radius Rocket 251	949
Radius Rocket 33	1599

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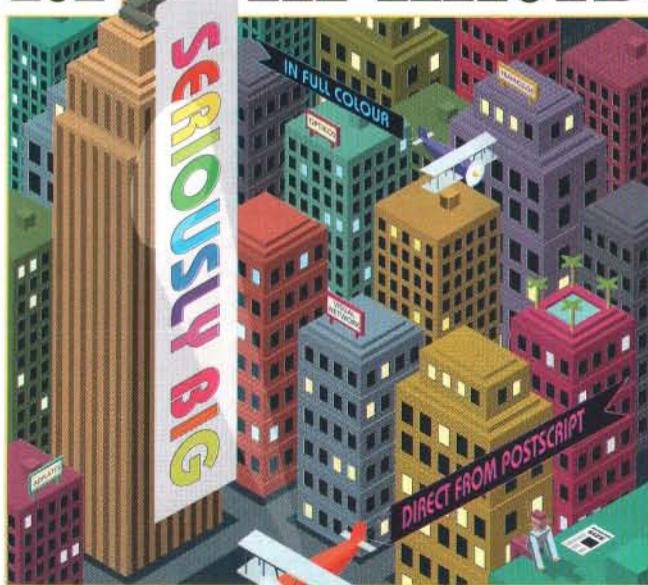
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The MacUser Buyers' Guide

The MacUser Buyers' Guide is Europe's definitive guide to the Mac products that matter. The software, and most hardware, has been tested by MacUser's reviews panel - review ratings are shown on a scale of one (poor) to five (excellent). MacUser reserves the right to alter ratings as upgrades appear. New additions are highlighted in red. Queries regarding the Buyers' Guide should be addressed to: Julian Torreggiani, Buyers' Guide, MacUser, 19 Bolsover Street, London W1P 7HJ.

Key Copy protected MacUser Award winner, 1992 MacUser Best Buy



ACCOUNTING

Applicont Professional

£99. Vol 9 No 8
Low-end accounts package with a full range of basic features.
Applisoft 0763 241034

Astra DeskTop Accounting 1.7
£99. Vol 9 No 8

Single- or multi-user business control system. S&S Systems 0909 773399

MacMoney 3.5.3

£89. Vol 9 No 8
Accounts package structured for individual finances with a forward planning option. Softline 081 401 1234

Modulus Gold 3.3.9

£1485. Vol 9 No 8
Modular system based around 4th Dimension database with a variety of front-ends for expansion into areas other than accounting. Vector Software 0580 766666

MYOB 3.0

£249. Requires: Any Mac. Vol 9 No 8
All-in-one package which claims to totally automate business accounts. Soft Numbers 0992 451551

Path2 Accounts 1.6.1

£99. Vol 9 No 8
Easy-to-use package with graphical interface and VAT handling. Softline 081 401 1234

Pegasus Accounts 2.3
£395. Requires: Any Mac. Vol 9 No 8
Easy-to-use accounts program, with 17 modules. Has many features. Access Accounting 0206 322575

Ritz Accounting 4.0

£395. Requires: 2M; hard drive. Vol 9 No 8
Fully integrated accounting software, with sales/purchase order processing and job costing with time recording. Principal Distribution 0706 831831

Sage Bookkeeper 1.0
£149. Vol 9 No 8
Aimed at users with simple requirements with good search and VAT facilities. Wizard Accounting Systems 0932 570230

BUSINESS & PROJECT MANAGEMENT

ACT! 1.0.1

£295. Requires: 4M RAM. Vol 9 No 11
Personal organiser with contact manager, diary and word processor. Frontline Distribution 0256 463344

Far Side Calendar

£49. Vol 8 No 13
Personal appointments calendar with Far Side cartoons. Allows editing and display of appointments by day, week, month or year. MacWarehouse 0800 181332

Keyplan

£425. Vol 8 No 9
Program for organising business projects. MacVank 0784 257257

Lotus Notes 3.0
£249. Vol 9 No 8
Starter Pack with two Mac clients £795. Requires: OS/2 server; workable Mac. Vol 9 No 12

Program that allows users on a network to exchange and manager information. Principal Distribution 0706 831831

Microsoft Project 3.0
£249. Vol 9 No 8
Project management software with good user interface. Microsoft 0734 270000

Stella II 2.2
£125. Vol 9 No 14
Low-cost personal information manager. Provides a to-do list, diary and scheduler in one package. Amtech 0202 476977

Timeslips
£345. Requires: Mac Plus. Vol 8 No 2
Tool for those who need to bill clients on a 'time worked' basis. Deepak Sareen 081 423 8855

WordPerfect Office 3.0
£110 single user; £359 5 user. Requires: Mac Plus; System 6.0.4. Vol 8 No 2
Workgroup communications tool incorporating mail, calendar, database and Finder-replacement. WordPerfect 0932 850500

WordPerfect Works 1.5
£120. Vol 9 No 6
Six pieces of business software in one package. WordPerfect 0932 850500

Works 3.0
£145. Requires: Mac Plus; 1M. Vol 8 No 18
Integrated package comprising word processor, spreadsheet, database and communications module. Microsoft 0734 500741

CAD/CAM

addDepth

£139. Requires: 68030 Mac; 4M RAM; 32-bit QuickDraw; 12in Screen. Vol 9 No 4
Vector-based 3D rendering package. Amtech 0202 476977

Alias Sketch 1.5
£95. Vol 9 No 4
3D modelling and rendering package. Aptec 071 627 1000

Archicad 4.1
£3500. special education prices available. Requires: SE/30; 4M. Vol 7 No 16
Solid architectural CAD program. Has many powerful features and a good user interface. PRD Creative Software 0902 755293

Ashlar Vellum 3D 2.12

£1800. Requires: SE/30 or Mac II; 4M. Vol 8 No 2
Intuitive, powerful, 3D CAD package with import/export facilities and an excellent user interface. Vellum Software 0223 300943

AutoCAD
£2500. Requires: IIfx (IIfx with math co-processor); hard disk; 5M RAM (8M with System 7.0). Vol 9 No 3
User-friendly version of Autodesk's CAD package that now utilises the Mac interface. Datech 081 308 1800

Clariscad 2.0
£675. Requires: Mac Plus; 2M. Vol 6 No 23
2D design and drafting package. Claris 081 756 0101

Dimensions
£160. Requires: Classic IIfx. Vol 9 No 4
An easy-to-use but powerful tool for 3D modelling. Adobe UK 081 547 1900

Infini-D 2.5
£799. Requires: Mac II; 2M. Vol 9 No 14
Combined 3D modelling, rendering and animation package. Gomark 071 731 7930

MacroMind Three-D
£1195. Vol 8 No 14
3D program with animation facilities. Computers Unlimited 081 200 8282

MiniCad+ 4.0
£595 High-precision 2D drafting and complex 3D design. Gomark 071 731 7930

ModelShop II 1.2
£699. Requires: 2M RAM. Vol 7 No 14
3D modelling package. Computers Unlimited 081 200 8282

Pixar Mac RenderMan 1.1
£399. Requires: Mac II; 5M; System 6.0.3; 8- or 24-bit colour display. Vol 9 No 8
3D rendering and wireframing software. Computers Unlimited 081 200 8282

Pixar ShowPlace
£589. Vol 9 No 4
3D modelling package. Computers Unlimited 081 200 8282

PowerDraw 4.0
£675. Requires: 4M. Vol 9 No 12
CAD package for 2D drafting with a good range of plug-in modules. PRD 0902 75529

RayDream Designer 2.0
£385. Requires: SE/30 or Mac II; 4M RAM. Vol 9 No 4
3D modelling and rendering package. Amtech International 0202 467977

StrataVision 3D 2.5
£681. Requires: Mac LC with maths co-processor; 5M RAM; Vol 8 No 19
3D modelling and animation package. Gomark 071 731 7930

Swivel 3D Professional
£549. Requires: Mac II or SE/30; 4M. Vol 6 No 23
3D modelling and animation package. Gomark 071 731 7930

CONNECTIVITY

DataClub 2.0

£285 3 users; £549 10 users. Requires: Mac Plus; 2M. Vol 7 No 4
Lets you treat disk space on networked Macs as a single volume. Gomark 071 731 7930

DataClub Elite

£700. Requires: Any Mac. Vol 8 No 6
A filesharing system which does not require a dedicated server. Gomark 071 731 7930

ES-F2F
£995 image exchange; £995 video conferencing; £1495 combined products. Requires: Grey-scale monitor; 5M RAM. Vol 9 No 5
Video conferencing system which allows face-to-face communication on the Mac. Frontline 0256 20534

EtherPeek 1.4

£649. Vol 7 No 12
Captures network data and analyses network traffic on a Mac-based Ethernet network. Principal 0706 831831

LanRover

£1595 4E; £2395 8E. Requires: Ethernet network or gateway. Vol 9 No 5
Comms Server that drives up to eight dial-in modems on an Ethernet network. Principal 0706 831831

Macintosh PC Exchange

£50. Vol 8 No 16
Mounts DOS diskettes on the Mac desktop and reads them. Maps DOS file name extensions to Mac applications. Freefone Apple

MacLink Plus/PC 7.0.2

£129 for software; £155 with cables. Vol 9 No 9
Application that allows file transfer and translation between Mac and PC. Principal 0706 831831

MacSupervisor 2.02

£695 plus £25 per Mac. Vol 8 No 7
Package for network managers to keep track of software usage. Hi Resolution 0580 211194

MacTen Unix
£495 (basic system); £325 (development system); £149 (technical documentation). Vol 8 No 21
Complete implementation of the BSD 4.3 Unix for Mac. RedNet 0494 513333

MicroPhone II

£249.95. Vol 8 No 21
Comms package with many advanced features. Computers Unlimited 081 200 8282

Microsoft Mail 3.1

£275 (5 user). Requires: Mac SE; 1M. Networks Vol 8 no 25
Supports fax interfacing, as well as transparent communication with most other mail systems. Microsoft 0734 500741

NetDistributor

£545 (unlimited users). Requires: Mac network. Vol 8 No 14
System administration package. Installs files and folders to users over a network from a single Mac. VoiceQuest 081 747 8666

NetMounter

Single-user £79.95; 5-user £299.95; 10-user £499.95. Requires: System 6.05; Ethernet adaptor; Novell Network server running Netware 2.15, 2.2 or 3.11. Vol 8 No 15
A simple application which connects Macs to PC-based Novell networks. Computers Unlimited 081 200 8282

NetOctopus

£475 for 10-user pack. Requires: Mac Plus; 1M. Vol 8 No 2
Network administration package. MacVank 0784 257257

RunPC

£345 (Network); £159 (Remote). Requires: IBM-compatible PC; Any Mac. Vol 8 No 2
Allows a user to control the PC using a Mac. Key Exchange 081 744 1551

Server Sentry 1.0

£397 for admin program plus one agent; £317 five agents. Vol 9 No 14
Program for remotely administrating multiple servers. Gomark 071 731 7930

Smartcom II

£99. Vol 8 No 21
Easy to use comms software with good user interface and an excellent macro facility. Hayes 081 848 1858

SoftPC Classic

£129. Requires: 2M or 4M under MultiFinder; Mac Plus; Vol 7 No 10
Use your Mac to emulate an IBM-compatible PC. Principal 0706 831831

TeleFinder Group Edition 3.0
£369; NetConnect £129. Vol 9 No 11
A complete host and user system for setting up a bulletin board. AM Micro 0392 426473

TeleFinder Pro

£79. Requires: modem. Vol 8 No 8
Comms software specifically for TeleFinder bulletin boards. AM Micro 0392 426473

Timbuktu 5.0

£159; 10-user £799; 30 user £1595. Requires: Mac Plus; PC running Windows 3.0 Vol 9 No 9
Utility that allows direct control over Macs and Windows PCs on a network. Farallon 071 245 6919

TOPS 3.1

£175. Requires: Mac Plus; 1M. Vol 7 No 24
Peer-to-peer networking application. Frontline 0256 463344

Vicom Connect, MultiTerm, Pro

£185, £245, £695. Requires: 1M
A range of comms programs with powerful scripting capabilities. Vicom 0202 293233

DATABASES

4D 3.0.1/4D Server
£750 4D 3.0.1; £1125 4D Server (three users); £750 4D Compiler 2.0; £475 4D Runtime 3.0 (four users). Vol 9 No 5
Powerful upgrade to the relational database that speeds up multi-user access and multi-tasking functions. ACI 0625 536178

Cat III 1.2
£395. Requires: Any Mac. Vol 8 No 18
A relational database for typing and storing letters and contacts. CanDo 0452 527603

CatBase
£195. Requires: Any Mac. Vol 8 No 18
Single-user £595; multi-user £995; additional users £150 each. Requires: 2M RAM. Vol 8 No 13
Relational database publishing system that interfaces with PageMaker or QuarkXPress. BBF Publishing 0920 871866

Fetch 1.0
£195 (£1560 for 10 user pack). Requires: 4M RAM; QuickTime 1.0; Colour QuickDraw 1.2. Vol 9 No 4
Database allowing easy access to sound, movie and graphics files on a network. Aldus 031 220 4747

File Force 2.2
£295. Requires: 1M. Vol 6 No 16
Entry-level version of 4th Dimension. ACI 0625 536178

FileMaker Pro
£275. Requires: Mac Plus; 1M. Vol 8 No 19
Database manager and forms generator. Claris 081 756 0101

Helix Express 1.0
£279. Vol 9 No 7
Powerful relational database that makes full use of icons to simplify programming. Helix Technologies Europe 0642 343455

nuBase
£195. Requires: 2M RAM. Vol 8 No 5
Relational database which started life as dBase Mac. Softline 081 401 1234

Omnis 7.1
£750. Requires: Mac Plus; 2M. Vol 8 No 6
Powerful and flexible relational database. Blyth Software 0728 603011

Panorama II
£295. Requires: Mac Plus; 1M. Vol 7 No 16
Flat-file database. Forester Systems 081 993 1516

DESKTOP PUBLISHING

DesignStudio 2.0
£595. Requires: Mac II; 2M. Vol 6 No 22
Page layout program offering character-level style sheets, rotation of text and graphics. Letraset 071 928 3411

FontStudio 2.0
£395. Requires: Mac Plus; 1M. Vol 7 No 11
Comprehensive font creation package. Letraset 071 928 3411

FrameMaker 3.0
£895. Requires: Mac II; 4M. Vol 7 No 18
Excels in producing lengthy technical documents. Word processing module runs on any Mac. Principal 0706 831831

InPosition
£1495. Requires: 68030 CPU; 8M RAM; QuarkXPress 3.1. Vol 9 No 9
XPress extension that takes finished pages from Quark and outputs them as four colour signatures while on the desktop. MediaHaus Europe 071 431 8459

Metamorphosis Professional 2.0
£110. Requires: Mac Plus; 1M RAM. Vol 7 No 21
Font conversion program with ability to convert text into PICT and EPS files. Softline 081 642 2255

Multi-Ad Creator 3.5
£795. Requires: Mac Plus; 1M.
Page make-up program aimed at the advertising market. Studio Box 0734 502556

OmniPage Direct
£450. Requires: Mac II; System 7.0; 4M RAM. Vol 8 No 17
OCR package that can load text directly into other applications. Computers Unlimited 081 200 8282

PageMaker 4.2
£695. Requires: Mac Plus; 2M. Vol 6 No 22
Popular and widely-used DTP package. Aldus 031 220 4747



Personal Press ●●●1/2

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Easy-to-use, low-end DTP package.
Aldus 031 220 4747
PressWise ●●●
£1495. Requires: Any Mac. Vol 8 No 17
Automate the imposition of pages for the
printing press. Aldus 031 220 4747
Publish It! Easy ●●●●
£99. Requires: 1M. Vol 7 No 11
Low-end desktop publishing application.
Softline 081 401 1234
Quark XPress 3.1
●●●● 1/2 **⊕**
£795. Requires: 2M RAM. Vol 8 No 4
Powerful, popular DTP package.
CU 081 200 8282
WordScan Plus
●●●● 1/2
£549. Requires: 4M. Vol 7 No 18
OCR package. Frontline 0256 463344

GRAPHICS & DESIGN

Adobe Illustrator 3.2
●●●●
£550. Requires: Mac Plus; 2M. Vol 7 No 8
Offers precision vector drawing with powerful
text manipulation and charting.
Principal Distribution 0706 831831
Aldus SuperPaint 3.0
£99. Requires: Mac Plus; 1M
Package which incorporates both paint
and draw features. Aldus 031 220 4747
CA-CricketDraw III 2.0
●●●1/2
£235. Requires: 5M RAM; colour display.
Vol 9 No 12
Powerful drawing package with support
for PostScript devices. Computer
Associates 0895 272501
Cachet 1.0.2 ●●●
£495. Requires: 24-bit monitor; Mac II;
8M RAM. Vol 9 No 7
Colour correction on the desktop for colour
repro beginners. CU 081 200 8282
ColorIt ●●●●
£99. Requires: Mac Plus; 1M. Vol 7 No 20
Low-cost colour image retouching and
paint package. KimTec 0202 888 873
ColorStudio 1.5
£395. Requires: Mac II; 5M; 8-bit video
card.
32-bit colour image assembly and ma-
nipulation program. Letraset 071 928 3411
Color MacCheese ●●●●
£62. Requires: Mac SE/30; System 6.0.5;
32-bit colour QuickDraw. Vol 6 No 15
Dead cheap 32-bit colour paint program.
Softline 081 401 1234
DeBabelizer 1.4 ●●●●
£399. Vol 9 No 8
Software that translates graphics files and
allows batch processing.
Letraset 071 921 3411
Digital Darkroom 2.0 ●●●●
£325. Requires: 4M. Vol 7 No 2
Grey-scale image processing software.
Aldus 031 220 4747
EPS Exchange 2.0 ●●●●
£99. Requires: FreeHand 3.0; Illustrator
88, 1.1 or 3.0. Vol 8 No 5
Utility for exchanging files between
FreeHand and Illustrator.
Softline 081 401 1234
Expert Color Paint ●●●●
£35. Requires: colour-capable Mac.
Vol 8 No 11
Very cheap colour paint package.
KimTec 0202 888873
Fontographer 3.5 ●●●●
£350. Vol 8 No 10
Font creation and editing tool. Supports
TrueType and Multiple Masters.
Softline 081 401 1234
FreeHand 3.1 ●●●●1/2
£395. Requires: Mac Plus; 2M. Vol 7 No 8
Easy-to-use, high-end illustration program
with built-in text effects and colour
support. Aldus 031 220 4747
IntelliDraw ●●●●●
£149. Requires: Any Mac; 2M RAM. Vol 8
No 20
A vector based drawing package for the
first time user that incorporates many
advanced features. Aldus 031 220 4747
Kai's Power Tools 1.0
●●●●●
£120. Requires: Photoshop 2.0; Mac with
co-processor. Vol 9 No 10
A set of 33 Photoshop plug-ins for texture,
gradient and fractal generation.
Macline 081 401 1111
Kid Pix Companion
●●●● 1/2
£25. Requires: 2M; Kid Pix. Vol 8 No 15
Add-in modules for Kid Pix, including
support for animation and QuickTime.
Softline 081 401 1234
LetraStudio 2.0 ●●●●
£295. Requires: 2M; ATM. Vol 8 No 7
Package for creating typographical
effects. Letraset 071 928 3411

LifeForms ●●●●

£399. Vol 9 No 4
3D animation software designed for
human motion.
Computers Unlimited 081 200 8282
MacDraw Pro ●●●●1/2
£325. Requires: Mac Plus; 1M.
Flexible and precise drawing tool.
Frontline Distribution 0256 463344
Monet ●●●
£249. Requires: Mac LC; System 7.0.
Vol 8 No 9
Paint package for creating Impressionist
effects.
Kimtec 0202 888873
Morph ●●●● 1/2
£99. Requires: 68020 colour Mac; 5M
RAM. Vol 8 No 21
Sophisticated special effects program
which transforms one image into another.
Softline 081 401 1234
Painter 2.0
●●●●1/2
£325. Requires: Mac LC or II; 2.5M.
Vol 9 No 5
Paint program which emulates traditional
media. Letraset 071 928 3411
Photoshop 2.5
●●●●● **⊕**
£725. Requires: Mac SE; 2M.
Enables creation and retouching of full24-
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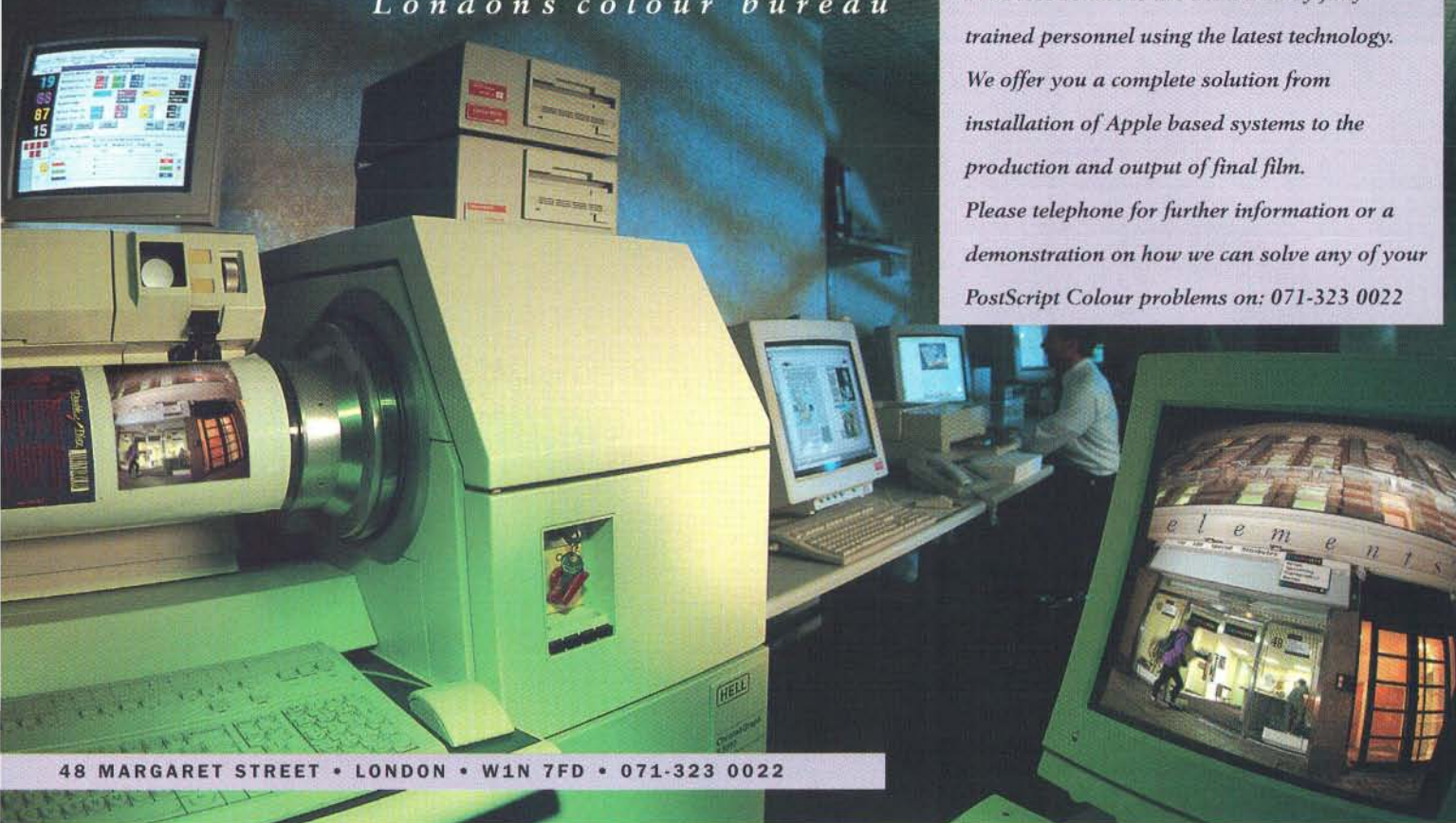
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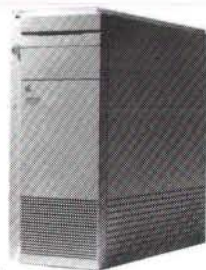
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Mac Centris 650
E2595 4/160; E2995 4/230; E3695 8/230; E3995 8/500 CD. Vol 9 No 4
68040, 25MHz chip with maths co-processor and three NuBus slots. RAM expandable to 136M, optional CD-ROM drive and built-in Ethernet.
Freefone Apple
Mac Quadra 800
E4195 8/230; E4755 8/500; E4995 8/500 CD. Vol 9 No 4
33MHz, 68040 chip and maths co-processor. Three NuBus slots and three internal drive bays (one 5.25in and two 3.5in). Built-in Ethernet as standard.
Freefone Apple
Mac Quadra 950
From E4895. Vol 9 No 1
Most powerful Mac on the market, modelled on the Quadra 900 but with a 33MHz 68040 chip. Freefone Apple
Mac PowerBook 145
E1395 4/40. Vol 8 No 19
Mid-range portable Mac 25MHz 68030 chip and LCD display. Freefone Apple
Mac PowerBook 145B
E999. Vol 9 No 13
25MHz, 68030 entry-level PowerBook with supertwist LCD screen.
Freefone Apple
Mac PowerBook 160
E1695 4/40; E1845 4/80; E2095 4/120. Vol 8 No 21
Mid range portable Mac based on a 25MHz 68030 chip with a supertwist LCD display giving 16 shades of grey. Ships with built-in video support for any Apple monitor up to 16in at 256 colours. Freefone Apple
Mac PowerBook 165c
E2745 4/80; E2945 4/160. Vol 9 No 4
The first of the PowerBook range to support built-in 8-bit colour. 33MHz, 68030 chip. Freefone Apple
Mac PowerBook 180
E2645 4/80; E2895 4/120. Vol 8 No 21
Top of the range PowerBook with 33MHz, 68030 CPU and maths co-processor. Active matrix display and with built-in video support for most Apple monitors and some VGA displays.
Freefone Apple
Mac PowerBook 180c
E2699. Vol 9 No 13
Top of the range colour PowerBook with 256 colour, 8.4in screen and 33MHz 68030 CPU. Freefone Apple
Mac PowerBook Duo 210
E1695 4/80. Vol 8 No 21
Apple's portable half of the Duo Dock system. Based on a 25MHz 68030 chip with a 16 shade grey-scale LCD display.
Freefone Apple
Mac PowerBook Duo 230
E1925 4/80; E2175 4/120. Vol 8 No 21
Top machine in the Duo series with 33MHz 68030 chip. Once again 4-bit supertwist LCD display with max RAM configuration of 24M. Freefone Apple
Psion Series 3 ●●●/1/2
From E149.95 (Mac Link E69.95). Vol 7 No 23.
Pocket computer, measuring 6.5 by 3.3 by 0.9in and weighing 90g. 240 by 80 pixel screen, with QWERTY keyboard. Built-in word processor.
Psion UK 071 262 5580

MONITORS & CARDS

Apple Two Page Colour Display ●●●
E2695. Vol 7 No 24
21in Trinitron monitor.
Apple 081 569 1199
Axxys Strategy 20in ●●●
E799. Requires: Classic. Vol 8 No 12
20in, 72dpi grey-scale monitor for the Classic. MacEurope 0603 741222
ClearVue XL/Classic/LC
From E295. Requires: Mac II/Classic/LC.
Mono graphics boards. XL and Classic supports a range of monitors up to 21in. The LC board supports 19in and Apple portrait monitors. Frontline 0256 463344

Digital Film ●●●/1/2
E4995. Requires: Mac Ilixx; 8M RAM; System 7.0; QuickTime 1.5. Vol 9 No 3
Video digitising card that brings full-screen, full-motion video to the Mac.
Principal Distribution 0706 831831
Eizo Flexscan S750i ●●●/1/2
E2099. Vol 9 No 7
21in colour monitor. Eizo 0483 757118
Eizo Flexscan T560IT ●●●●
E1749. Vol 8 No 20
17in colour monitor with sharp screen and good controls. Eizo 0483 757118
Ellinor Touchscreen TS-300 ●●●●
E1087; E655 for upgrade of existing monitor. Vol 9 No 6
14in pressure sensitive screen. Ellinor Technologies 0734 311066
E-Machines T162 ●●●
E1595. Vol 8 No 20
16in colour monitor with software converters for either Apple/IBM outputs.
Heyden & Son 081 203 5171
Formac ProNitron 80-21 ●●●●
E3400. Vol 9 No 7
High-resolution colour 21in monitor.
Formac 0727 845546
Harlequin ●●●/1/2
E1450. Requires: Mac II; 32-bit QuickDraw. Vol 7 No 3
24-bit video board which combines Mac-produced images with video sources.
Graphics Unlimited 0223 312808
Kingfisher ●●●●
E995. Requires: Mac II series; 4M RAM. Vol 8 No 19
Imagegrabbing board which can be used to capture 24-bit frames for QuickTime conversion. Neutral 081 599 9902
Mediator ●●●●
E1875. Requires: Mac Plus. Vol 7 No 15
Sophisticated video scan converter with built-in power supply. Easy to use. Displays very little cross-colour and can be genlocked to an external video source.
VideoLogic 0923 260511
NEC 5FG ●●●●/1/2 **E1439.** Vol 8 No 20
17in monitor with superb colour and picture control as well as very good software.
NEC 081 993 8111
NEC Multisync series
From E615. Requires: Mac II; display card Multisync screens - 14in, 16in and 20in - with maximum resolution on the 20in model of 1280 by 1024 pixels.
NEC Peripherals 081 993 8111
Philips Brilliance ●●●●/1/2 **E2699.** Vol 9 No 7
High-resolution 21in colour monitor.
Philips Interactive 081 689 4444
NuVista + ●●●●
From E2405. Requires: Mac II. Vol 7 No 15
High-end 32-bit video display card for the professional broadcast user.
Techex 0628 777800
Radius Color Pivot ●●●●/1/2
E1399; Pivot 8-bit interface card E499. Requires: SE/30 or Mac II with display adaptor. Vol 7 No 12
Good value 15in colour monitor which operates in both portrait and landscape modes. CU 081 200 8282
Radius Enhanced PowerView
E599. Requires: PowerBook or Classic II
Allows PowerBook and Classic II users to connect colour or monochrome monitors.
Radius 0635 38531
Radius Pivot ●●●●
From E1125. Requires: Mac SE/30.
A42- or 4-grey-scale display which, when used with a Mac SE/30 or a Mac II, can be swivelled from portrait to landscape mode.
Computers Unlimited 081 200 8282
Radius TPD 21in ●●●● **E1095.** Vol 7 No 9
Grey-scale display with easily adjustable brightness and contrast and above average picture quality.
CU 081 200 8282
RasterOps Custom Colour ●●●●
E2395. Vol 9 No 7
21in colour monitor.
RasterOps 0256 59283
RasterOps 24XLI
E1745. Requires: Mac II.
24-bit graphics board with on-board QuickDraw acceleration and multiple resolution for the Mac II.
Frontline 0256 463344
RasterOps 8XLI
E845. Requires: Mac II.
8-bit colour graphics board with on-board QuickDraw acceleration.
Frontline Distribution 0256 463344
Sigma PowerPort ●●●●
E895 (Classic version); E995 (PowerBook version). Vol 8 No 12
15in mono portrait display for the Classic and PowerBook with 72, 80 and 88dpi resolutions. DirektTek 081 845 5969

Macintosh Colour Classic

- 4MB/HD40
- 10" Colour Monitor
- Standard Keyboard
- 68030 @ 16Mhz
- processor direct slot

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- 14" Colour Monitor
- Standard Keyboard
- 68030 @ 16Mhz
- processor direct slot
- in-built video support

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Macintosh LC III

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- Standard Keyboard
- 68030 @ 25Mhz
- processor direct slot
- in-built video support up to 16" colour

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- 68030 @ 25Mhz
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Macintosh Centris 610

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- 14" Colour Monitor
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Macintosh Centris 610

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- 68040 @ 20Mhz
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PowerBook 180

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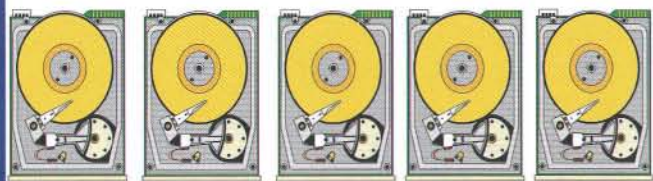
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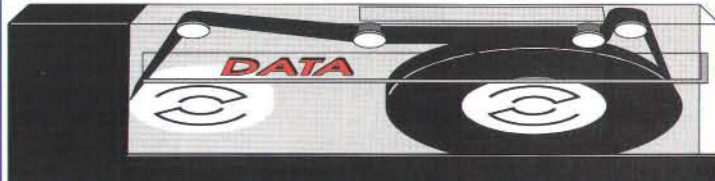
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SuperMac Spectrum/24 Series £999. Requires: Mac II; colour monitor. 24-bit accelerated video cards. Principal Distribution 0706 831831
SuperMac SuperMatch 21in £2695. Vol 9 No 7
21in colour monitor including TekColor colour matching software. Principal Distribution 0706 831831
Taxan Multivision 875 Plus £999. Vol 8 No 20
Low-cost 17in colour monitor. Taxan 0344 867 646
Venice 640 TV £199. Requires: Mac II
24-bit colour graphics display card for Apple 13in monitor. 32-bit QuickDraw compatible. Neutral 081 599 9902
VideoLogic DVA-4000 £1795. Requires: Mac II. Vol 6 No 25
Produces live video on the Mac screen from external video sources. VideoLogic 0923 260511
VideoSpigot £999. Requires: Mac II; 4M RAM; System 6.0.7. Vol 8 No 4
A low-cost video digitising board for creating QuickTime movies. Principal Distribution 0706 831831
VideoVision £999. Requires: Mac II; 4M RAM. Vol 8 No 20
NuBus card that gives realtime plug-and-play video input and output. Computers Unlimited 081 200 8282

OUTPUT DEVICES

Apple Colour Printer £1995. Vol 9 No 5
360dpi four-colour bubblejet printer. Prints up to A3. Freezone Apple
Apple LaserWriter Select 310 £945. Vol 9 No 5
300dpi, 5ppm laser printer. PhotoGrade and FinePrint come as standard. Freezone Apple
Apple StyleWriter II £270. Vol 9 No 5
Inkjet printer that gives laser-quality output in most applications. Freezone Apple
Apple LaserWriter Pro 630 £2095. Vol 9 No 4
600dpi, A4 laser printer with 64 resident fonts, PostScript Level II and Twin bin capacity. Freezone Apple
Bézier 4040 £1299. Vol 8 No 6
Four page per minute, TrueImage laser printer. DirekTek 081 845 5969
Brother HL-4PS £1699. Vol 8 No 6
300dpi, 4ppm laser printer compatible with both Mac's and PC's. Brother 061 330 6531
CalComp DesignMate £1695 to £1895
Range of colour pen plotters from A4 to A1.
CalComp 0734 320032
Canon CLC-10 £4995. Requires: Any Mac; 2M RAM (more recommended). Vol 8 No 16
All-in-one, 24-bit, 400dpi colour printer, scanner and photocopier. Canon UK 081 773 3173
Dataproducts LZR 1560 £2795. Vol 8 No 12
Multi-bin, A3, 400dpi laser printer. Dataproducts 0734 884777
DEclasser 1152 £899. Vol 9 No 5
PostScript level II 4-page per minute laser printer. DirekTek 081 845 5969
Epson EPL-7500 £1999. Vol 8 No 6
6ppm laser printer with AppleTalk and RS232 interfaces. 2M to 4M RAM, 35 fonts in ROM. Epson 0442 61144
GCC BLP Elite £999. Vol 8 No 5
4ppm PostScript printer. Has a resolution of 300dpi and caters for personal or small business use. GCC Technologies 081 569 4030

GCC Business LaserPrinter II

£995. Vol 9 No 5
4ppm PostScript printer, with 35 resident fonts and a resolution of 300dpi. Includes SCSI port for hard disk connection. IIS printer runs at 8ppm. GCC Technologies 081 569 4030
GCC ColorTone £895. Vol 9 No 2
Low-cost dye-sublimation printer for proofing good-quality colour roughs. GCC Technologies 081 569 4030
GCC WideWriter 360 £1599. Optional second paper tray £89; Refill ink cartridge £14. Requires: Any Mac. Vol 8 No 19
360dpi inkjet printer which can output to paper up to 17in. GCC Technologies 081 569 4030
GCC WriteMove II £399. Requires: System 6.0.7 or later. Vol 9 No 5
Portable printer designed specifically for PowerBook users. GCC Technologies 081 569 4030
HP DeskJet 1200C PS £1839. Vol 9 No 11
A4, PostScript Level 2 inkjet colour printer. Hewlett-Packard 0344 369369
HP DeskWriter £425. Vol 7 No 7
QuickDraw-based inkjet printer with a resolution of up to 300dpi. Principal Distribution 0706 831831
HP DeskWriter 550C £729. Requires: Mac Classic. Vol 9 No 5
Low-cost 300dpi inkjet colour printer. Principal Distribution 0706 831831
HP LaserJet IIIP £999. PostScript cartridge £461; AppleTalk interface £180. Vol 8 No 6
300dpi, 4ppm laser printer based on the Canon LX engine. 1M RAM with PostScript and AppleTalk optional. HP 0344 369222
Imagesetters
Imagesetters produce high-quality output at up to 2540 or even 3000 dots per inch (dpi).
AD Dick-Itel 081 568 9297
Agfa 081 560 2131
Hyphen 0992 654747
Linotype Hell 081 847 9100
Monotype 0737 765959
Kodak XL77720 £12,500. Vol 8 No 18
Dye sublimation printer giving outstanding quality and good intuitive software. Kodak 0442 61122
LabelWriter II Plus £229.95. Requires: Any Mac. Vol 8 No 15
A convenient output device for printing labels. Computers Unlimited 081 200 8282
MacSpeaker MS-1 £179.95. Requires: Any Mac. Vol 8 No 14
Added power for the Mac's internal speaker. MCM 081 963 0663
MicroTek TrueLaser £1295. Vol 8 No 6
6ppm 300dpi laser printer compatible with both TrueType and PostScript. Automatic switching between AppleTalk, RS232 and Centronics interfaces. Aptec 071 627 1000
Newgen Turbo PS/300 £1895. Vol 8 No 6
Canon SX-engine 300dpi laser printer with AppleTalk interface. SCSI interface for attaching external hard drive is available. Pre-Press Solutions 0844 28689
Oki OL830 £1499. AppleTalk interface £199. Vol 8 No 6
300dpi A4 LED PostScript printer. 17 scalable fonts, 2M RAM upgradeable to 4M. Oki Data 0753 531292
QMS PS410 £1395.
4ppm monochrome PostScript laser printer. Pragma 0923 853411
RasterOps CorrectPrint 300 £8995. Vol 8 No 18
Dye sublimation printer. RasterOps 0256 59283
Seiko PhotoMaker £11,165. Vol 8 No 18
Dye sublimation printer that can print up to B4 size. Ambitron 0635 36555
Star LaserPrinter 4 £1399. Vol 8 No 6
4ppm PostScript printer with 35 fonts and 2M RAM. Star Micros 0494 471111
Tektronix ColorQuick £2159. Vol 6 No 16
The inkjet mechanism provides entry-level colour printing. 11 typeface families. Tektronix 0628 486000

Texas Instruments MicroLaser PS

£1490. Vol 6 No 16
User-friendly PostScript printer includes a front panel with LCD menu. Appropriate Technology 071 627 1000

SCANNERS & INPUT DEVICES

Animas Colour Hand Scanner £499. Requires: Mac II; 2M. Vol 8 No 2
Low-cost hand-held colour scanner, let down by the supplied software. GeniLAN 081 667 0923
Animas Synergizer II £995. Vol 8 No 22
300dpi colour scanner. PTT Europe 081 667 0923
Apple Colour OneScanner £1145. Vol 9 No 5
24-bit, 1200dpi colour scanner with Ofoto 2.0 software. Freezone Apple
Apple OneScanner £795. Vol 9 No 25
Flatbed 300dpi greyscale scanner, with 'intelligent' Ofoto software. Apple 081 569 1199
Asuka Colour Scanner NuBus £425. Vol 6 No 21
Hand-held colour scanner; scans images of up to 2.5in by 5in in 8-bit colour at 90dpi. NuSys 0379 650777
AVR 8000/CLX £1565 to £1765. Vol 8 No 22
400dpi colour scanner. Tekware 0562 882125
BX-130 barcode reader £319. Requires: Any Mac with ADB port. Vol 7 No 25
Easy-to-use barcode reader that requires no software. BDL 0642 225225
CalComp 33000 DrawingBoard £1295 to £2995.
12in by 12in to 44in by 60in with corded 4 to 16 button cursor. Cordless cursors and pressure sensitive pens are optional. CalComp 0734 320032
Canon Ion-Mac £2599.99 (camera plus digitiser board); £1750.99 (camera only). Requires: Mac II; 4M RAM. Vol 8 No 17
High-quality still video camera with a powerful Mac interface, which stores pictures on floppy disks. John Blisshen 081 969 0071
FotoMan £249 (including Digital Darkroom). Requires: Any Mac; 2M RAM. Vol 8 No 15
A light, easy-to-use electronic grey-scale camera. LogiTek UK 0344 891313
Epson GT-8000 £1349. Vol 8 No 22
800dpi desktop colour scanner. Epson 0442 61144
HP ScanJet IIc £1575. Vol 8 No 22
400dpi colour scanner with Accupage OCR technology. HP 0344 369222
HSD Scan-X Color £1825. Vol 8 No 22
24-bit colour scanner with a resolution of 2400 dpi for line art and 600dpi for colour and grey-scale images. Forester Systems 081 993 1516
KaleidoScan 1.2 £149. Requires: Mac II; 2M; System 6.0.2; greyscale scanner; for 32-bit images, 32-bit video board and 32-bit QuickDraw. Vol 7 No 6
Produces good 8-bit or 32-bit colour images from grey-scale scanners. Impact Research 0101 505 662 0551
LaCie SilverScanner £1695. Vol 8 No 22
600dpi by 300dpi colour flatbed scanner. MCB 021 708 1275
LightningScan £399. Vol 8 No 8
Hand-held scanner. Has a scanning resolution of up to 400dpi. Principal 0706 831831
Logitech ScanMan 32 £595. Vol 8 No 8
105mm wide hand-held scanner. Can capture halftone images in 32 shades of grey. LogiTek 0344 891313
Mac K.A.T. £110. Requires: Spare ADB port. Vol 8 No 21
An alternative input device specifically for the music market that emulates key commands through a remote hand controller. Q Logic 0382 25311

Microtek ScanMaker II, IIxe

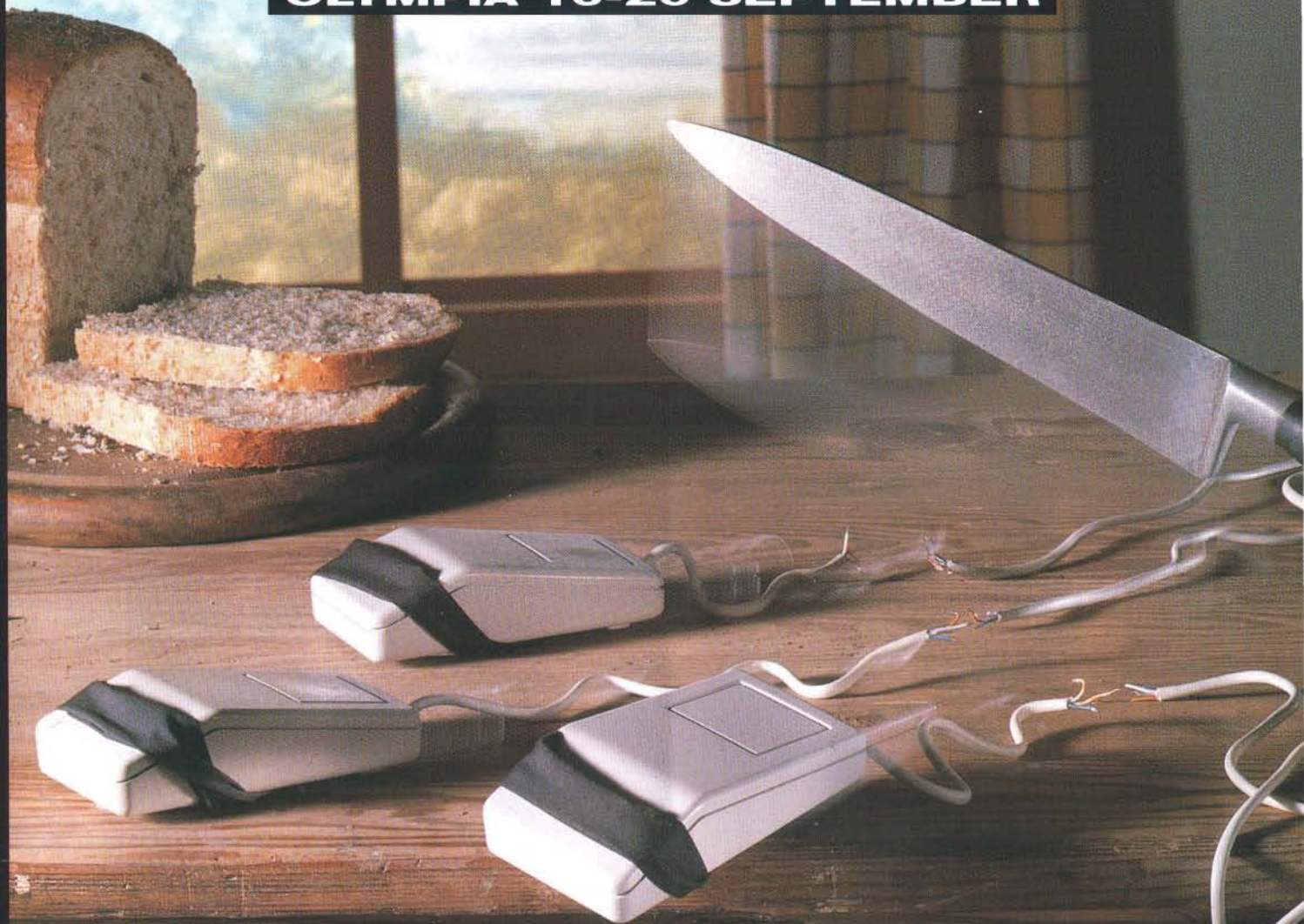
£1295
Colour, SCSI based, flatbed scanners. Includes limited edition of Photoshop for the II and a full edition for the IIxe. Computers Unlimited 081 200 8282
Mirror 600 Colour Scanner £999. Vol 8 No 22
24-bit 600dpi colour scanner with 8.5in x 11in scanning area. Includes Adobe Photoshop. Mirror Technologies 0376 325 500
Neos I-Beam £580 (A4); £995 (A3). Requires: Mac II. Vol 8 No 8
Hand-held scanner that connects via a NuBus card. Scans 64 shades of grey using an optical mouse that can be moved randomly over an image which the software then recreates on screen. Aptec 071 627 1000
Nikon LS3510AF £895. 35mm film scanner with either GPIB or SCSI interface. Nikon 081 541 4440
Océ G6421M, G6452M, G6453M, G6454M £955, £760, £695, £1795
Graphics tablets for freehand tracing, sketching and drawing. Océ Graphics 0454 617777
Sharp JX-320 £1300. Vol 8 No 22
24-bit flatbed colour scanner. Sharp Electronics 061 205 2333
Sharp JX-450 £3995. £527 interface cables Vol 6 No 22
Flatbed scanner. Principal 0706 831831
SolarPower £169. Requires: PowerBook. Vol 9 No 13
Compact solar panel for powering PowerBooks. Computer Generation 071 937 8777
Tamrack Artisan £1695. Vol 8 No 22
600dpi colour scanner with transparency attachment. MacEurope 0603 741222
The Typist Plus Graphics £595. Requires: Mac SE; 4M. Vol 6 No 20
300dpi hand-held scanner with built-in OCR software. CU 081 200 8282
Umax UC630 Color Scanner £1450. Vol 8 No 22
600dpi colour flatbed scanner. Digital Storage Technology 0628 529224
Wacom ADB Tablet £399. Requires: Mac II; 4M RAM; minimum 8M recommended. Vol 9 No 10
Pressure-sensitive, cordless tablet and pen. Computers Unlimited 081 200 8282
ZedPen £1095. Requires: Mac SE. Vol 6 No 11
High precision drawing tablet. Principal Distribution 0706 831831

STORAGE

AppleCD 300 £275. Vol 9 No 2
Cheap, double speed CD-ROM drive. Freezone Apple
Axsys Strategy 2650sr £3200. Vol 6 No 18
Competitively-priced erasable optical drive which runs with 650M cartridges. MacEurope 0603 741222
Axsys Strategy 2000 £499. Vol 8 No 2
CD-ROM drive. MacEurope 0603 741222
DAC DataPak 128M £1395. Requires: Any Mac. Vol 7 No 23
Fast, removable optical disk drive. Uses 3.5in optical disks to hold data. Digital Audio Concepts 0784 462175
ETC DataPort £699. Vol 8 No 8
Removable hard drive system. Mac Accessory Centre 091 295 0353
ETC Datapress £535. Vol 9 No 6
A SCSI expansion chassis that connects as a single SCSI device and allows a further seven to be connected. With multiple chassis, a theoretical 49 SCSI devices may be connected to one Mac. Mac Accessory Centre 091 295 0353
Frog Systems 120e £269. Vol 7 No 13
Inexpensive hard drive with 100M storage capacity. Frog Systems 0738 441522
Hard Drives
Vol 8 No 10 & No 16, also Vol 9 No 9
A large number of companies produce hard drives. Rather than listing every drive available we have printed the phone numbers of distributors selling hard drives for the Mac.

Ambar Systems 0296 435511
Apple Computer Freezone Apple Computer Capability 0392 64253
D2 Electronic 071 253 3265
DirekTek 081 845 5969
Digital Storage Technology 0628 529224
Formac 0727 45546
Frog Systems 0738 441522
GCC Technologies 081 569 4030
Hammer Distribution 0256 841000
Icicle Distribution 0602 242024
Ideal Hardware 081 390 1211
Mac Accessory Centre 091 295 0353
MacEurope 0603 741222
MicroNet 0926 470125
Nusys 0379 650777
Persona-TMC 0372 729611
Principal Distribution 081 813 5656
Prolyte 0235 530933
Standard Storage Technologies 0869 249499
Hitachi CDR1750S £500. Vol 8 No 2
CD-ROM drive with 64k cache and 320ms access time. Hitachi Sales 081 849 2092
Hitachi New Media CDR-MAC 2 £565.
Fast CD ROM reader with access times of 450ms. Hitachi Sales 081 849 2092
MicroNet SS-D8000 DAT £2150. Vol 9 No 3
8G DAT drive with integral hardware compression. MicroNet 0926 470125
Microtech External and Internal Drives From £345
Internal and external drives: range from 20M up to 320M. Principal Distribution 0706 831831
Microtech Nova R45 £899. Issue 45
A 45M Squest-based removable drive. Additional cartridges available for £89 each. Principal 0706 831831
Microtech OR650 £3995 Optical rewritable removable cartridge with an average access time of 95ms. Principal 0706 831831
Mitsubishi MW-SU1 £2500. Vol 6 No 18
Cheaper but slower option than similar devices. COREL Software allows CD-ROM emulation - useful developers tool. 600M capacity. STC Electronics 0279 626777
NEC CDR-74 External CD-ROM Reader £599; £45 Apple Interface Kit. Vol 6 No 24
CD-ROM drive that comes with all the standard file access software and audio CD software. NEC 081 993 8111
Optima MiniPak 8000 DAT £3295 with hardware compression; £2295 without. Vol 9 No 3
DAT drive supplied with or without hardware compression to give either 8G or 2G storage capacity. Tapes can be mounted like hard drives. Principal Distribution 0706 831831
PF20X Floptical £499; Optical disks £30. Requires: Any Mac. Vol 8 No 22
20M capacity floptical drive that can double as a second disk drive. DirekTek 081 845 5969
Panasonic LF5010E £2400. Vol 6 18
A WORM drive that reads and writes 940M cartridges. £80-£135 per cartridge. Panasonic 0344 853336
Panasonic LF7010E Optical Drive £2750 including Mac interface kit and 500M cartridge. Requires: any Mac. Vol 7 No 8
Fast and relatively cheap erasable optical drive. Panasonic 0344 853336
Toshiba XM-3301B £1099 with hardware compression; £999 without. Vol 9 No 3
Inexpensive 8G DAT drive with hardware compression and 2G without. Includes two 90M tapes. Computer Capability 0392 364253

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14" Colour Monitor
Duo Dock, St. Keyboard II



PowerBook Duo 230
4MB/HD120
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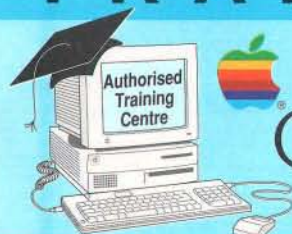


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1. Household Cash Flow

MONTH: Jan-91 Feb-91 Mar-91 Apr-91 May-91 Jun-91 Jul-91 Aug-91 Sep-91 Oct-91 Nov-91

INCOME	Jan-91	Feb-91	Mar-91	Apr-91	May-91	Jun-91	Jul-91	Aug-91	Sep-91	Oct-91	Nov-91
Earnings - Job	1100	1125	1150	1150	1200	1200	1200	1250	1250	1225	
Savings - Wife's Job	150	140	150	150	150	150	145	140	140	150	
Son / Daughter - Contribution	50	50	50	50	50	50	50	50	50	50	
Profit Sharing			500								
Transfer from Building Society	25			25					25		
Sale Assets - shares		150									
Other Income	25					25				25	
Other Income			50			50				50	
TOTAL INCOME	£1,350	£1,465	£1,900	£1,375	£1,400	£1,425	£1,445	£1,465	£1,440	£1,500	
EXPENDITURE	Jan-91	Feb-91	Mar-91	Apr-91	May-91	Jun-91	Jul-91	Aug-91	Sep-91	Oct-91	Nov-91
Housekeeping - Food	250	250	275	275	275	275	275	275	275	275	
Clothes	75	25	100	200	100	75	25	25	40	55	
Petrol	50	50	50	50	50	50	50	50	50	50	
Entertainment	75	60	50	50	40	55	65	65	75	80	
Mortgage	325	325	350	350	350	350	330	330	330	330	
Plastic - Credit Cards	125	125	125	125	125	125	125	125	125	125	
Holidays	125	125	125	125	125	125	125	125	125	125	
Insurance	20	20	20	20	20	20	20	20	20	20	
Purchase Assets	100		750			200					
Savings - Shares bought	200	200	200	200	200	200	200	200	200	200	

THE PERSONAL HELP SUITE 1.0

Get to grips with bank statement reconciliation and credit card borrowing, take control of mortgage repayments and household bills. This Help Suite sounds like the perfect way to make sure your personal cash flows in the right direction. These 26 indispensable Excel templates also provide no-frills advice on savings, pensions and insurance; guidance on making a will; all with specimen templates. (Applications needed: Microsoft Excel 3.0, Canvas, MacWrite)

File Edit Formula Format Data Options Macro Window

Normal

C11 200

02a Sales Forecasting Aid

Sales Forecasting Aid

Instructions:

1. Enter honestly realistic 'LIKELY' figures for each quarter after diligent research - undertake best
2. Amend 'Worst' & 'Best' in Startup section only - 15% is a sensible suggestion. The model
3. 'Worst' case figures are automatically transposed to dummy Income Cash Flow below
4. Read/F

SCENARIO	Startup >			at 3m >			at 6m >			at 9m >		
	Worst	Likely	Best	Worst	Likely	Best	Worst	Likely	Best	Worst	Likely	Best
CASH SALES	1,275	1,500	1,725	1,275	1,500	1,725	1,700	2,000	2,300	2,125		
EXPORT SALES	170	200	230	255	300	345	425	500	575	638		
HOME SALES	298	350	403	1,020	1,200	1,380	1,275	1,500	1,725	1,700		
Other Sales	43	50	58	425	500	575	638	750	863	850		
TOTAL SALES >	£ 1,785	£ 2,100	£ 2,415	£ 2,975	£ 3,500	£ 4,025	£ 4,038	£ 4,750	£ 5,463	£ 5,315		

Grossed up pa! > £ 21,420 £ 25,200 £ 28,980 £ 35,700 £ 42,000 £ 48,300 £ 48,450 £ 57,000 £ 65,550 £ 68,750

Consider:-

1. How relatively small monthly/quarterly variations can result in large year end differences.
2. If Sales miss by only 10% - that may be enough to cancel out any profit or incur a loss!
3. Beware 'Averages' can hide dramatic seasonal variations - so always consider each month/quarter
4. Will 'worst case' sales cover all overheads - with a contingency margin? Enter below left your

Known Total Overheads are > £ 40,000

20 WAYS TO BUSINESS SUCCESS HELP SUITE 1.0

The definitive tutorial on best business practices, a unique and comprehensive guide to the top 20 ways to business viability. Ready to use, this essential set of models is arranged in a logical sequence that looks at familiar financial problems from fresh perspectives. A must, whether you're new to business or not. (Application needed: Microsoft Excel)

Currency Conversions

Instructions:

1. Open all files using 'Business Converter' - alternatively ensure 'Macros' 'Currency Converter' is open & press
2. Enter below: Country (or sort) To see list database tables - press Command-F To return Press Option-C
3. Next enter currency rate and amounts to be converted in shaded cells. Read of conversions to and from all
4. To open detailed conversion tables automatically adjusted for chosen currency - Press Option-Command-E
5. Read! Print multi-conversions on detailed worksheet 'Round' < = 1 Currency' both ways based on CENTRE
6. To return to this worksheet - Press Option-Command-R Update database with guide prices and name change

Convert What Currency? From: Pound To: Franc Rate: 9.7 To: 100.00 To: 1,720.00 F Fr

FOUND & FOREIGN CURRENCY Rate: 9.7 From: Pound To: Franc To: 100.00 To: 1,720.00 F Fr

20-Oct-92 1.720.00 F Fr

CREATIVE CONVERSIONS HELP SUITE 1.0

This indispensable Help Suite includes 180 country/currency conversions, over 40 "fast facts" from sizes and weights to signs of the zodiac, all major metric conversions, postal rates and STD codes, and world times. (Application needed: Microsoft Excel)

ASSET ANALYSIS OF TRADE DEBITORS AND CREDITORS

PERIOD: AGING ANALYSIS - MONTH BY MONTH

AGE	1 month	2 months	3 months	4 months	5 months	6 months	7 months	8 months	9 months	10 months	11 months	12 months
Letter	£ 1,000	£ 1,000	£ 1,000	£ 1,000	£ 1,000	£ 1,000	£ 1,000	£ 1,000	£ 1,000	£ 1,000	£ 1,000	£ 1,000
Bank	£ 2,500	£ 2,500	£ 2,500	£ 2,500	£ 2,500	£ 2,500	£ 2,500	£ 2,500	£ 2,500	£ 2,500	£ 2,500	£ 2,500
Cardiff & CO	£ 399	£ 399	£ 399	£ 399	£ 399	£ 399	£ 399	£ 399	£ 399	£ 399	£ 399	£ 399
Long Plan Ltd	£ 10,500	£ 10,500	£ 10,500	£ 10,500	£ 10,500	£ 10,500	£ 10,500	£ 10,500	£ 10,500	£ 10,500	£ 10,500	£ 10,500
Wagon	£ 999	£ 999	£ 999	£ 999	£ 999	£ 999	£ 999	£ 999	£ 999	£ 999	£ 999	£ 999
Wagon	£ 250	£ 250	£ 250	£ 250	£ 250	£ 250	£ 250	£ 250	£ 250	£ 250	£ 250	£ 250
Wagon	£ 180	£ 180	£ 180	£ 180	£ 180	£ 180	£ 180	£ 180	£ 180	£ 180	£ 180	£ 180
Wagon	£ 10,001	£ 10,001	£ 10,001	£ 10,001	£ 10,001	£ 10,001	£ 10,001	£ 10,001	£ 10,001	£ 10,001	£ 10,001	£ 10,001
Wagon	£ 22.68	£ 22.68	£ 22.68	£ 22.68	£ 22.68	£ 22.68	£ 22.68	£ 22.68	£ 22.68	£ 22.68	£ 22.68	£ 22.68

BUSINESS AND FINANCIAL HELP SUITE 2.0

Make management decisions easy. Get to the heart of balance sheets, chargeout rates, product cycles and capital purchase. This vital suite of templates also allows you to assess gross and net profit, analyse audited figures and monitor the age of debtors and creditors. (Application needed: Microsoft Excel)

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012 1/1/1992

09 CDD Monthly SUM-MARY

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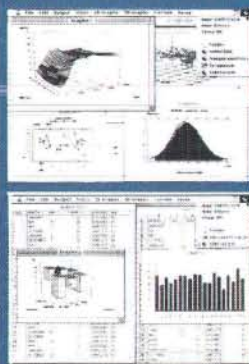
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Multimedia - The Creative Edge

28 August, Heriot Watt University, Edinburgh, Scotland.

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Nancy Flint 021 331 5869

September 1993

Ipex '93

7-15 September, NEC, Birmingham, UK. The largest UK trade show for printing and graphic arts industries.

Ipex '93 Exhibition 021 705 6707

Live '93

16-20 September, Olympia, London, UK. The consumer electronics show exhibiting computers, hi-fi, video and personal organisers, including the Newton MessagePad. News International Exhibitions 071 373 8141

Business Computing '93

21-24 September, Earls Court, London, UK. Exhibitors include Apple, Microsoft and IBM. Seminars will run throughout the show. Business Computing Exhibitions 071 486 1951

Intermedia Europe

22-24 September, Wiesbaden, Germany. Conference and exhibition on multimedia and CD-ROM. Reed Exhibitions 010 49 211 55 62 81

October 1993

Pentech '93

5-6 October, London Metropal Hotel, London, UK. European pen computing conference. Business Seminars International 071 490 3774

CD-ROM Expo & Conference

27-29 October 1993, World Trade Centre, Boston, US. Conference and exposition on how to profit from digital publishing, focusing on publishing CDs and accessing information on CD. Macworld Expo 0101 617 361 3941

November 1993

Workgroup Computing '93

3-5 November 1993, Olympia, London, UK. Conference dealing with the issues involved in workgroup computing. Future Events 0225 442244

COMING SOON IN MACUSER

Articles To Look Out For In Coming Issues

Multimedia Macs Cyclone and Tempest make their debut.

Fonts The definitive A to Z guide to fonts.

Security Batton down the hatches to keep your Mac from prying eyes.

Storage Products and tips to boost storage space and cut file sizes.

Databases File your data.



Back To School With CD-ROMs
Interact with mother: CD-ROMs offer a wealth of learning aids, from talking storybooks to animated sums.

SEARCH AND REPLACE

Vol 9 No 13

p13 Newsdesk The Association of UK Apple User Groups (formerly NMUG) can be reached on **071 930 3757**.

Nationwide Dealer Guide

The Nationwide Dealer Guide lists all Apple outlets in the UK which stock the latest edition of MacUser. Others wishing to join this scheme should contact James Burnay on 071 631 1433. MacUser is also available from W H Smith, John Menzies and leading newsagents.

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Shut down

by Charles Shaar Murray



Recently, for reasons best known to themselves, the forces which blow us helpless humans hither and yon like so much dandelion fluff in the breezes of life, took me to Seattle – known to all computer-savvy types as Gatesville, or Microsoft Country. In fact, if Gates so much as coughs, half the city not busy forming grunge bands is carted straight off to the lung ward for intensive testing.

As part of the acclimatisation process for a week in the jewel of America's Pacific Northwest, I upped my caffeine intake, smuggled in my PowerBook – they frisk you at the airport for non-DOS machines – and hit on a local bookstore for some relevant reading matter.

I scored myself a copy of Gates' biography, *Hard Drive* – I'd tell you the author's name, but the book has disappeared into the mountain of clutter in my study – and Steven Levy's *Hackers*, a history of personal computing published in 1984, just before Apple introduced the first Mac.

After perusing both, all I can do is echo the poignant last line of

Those drug-addled dweebs in the garages were

to infotech

what hippies,

punks, rappers

and grungers

were to

mega-dull

corporate rock

PsychoDerelict, celebrated MacAbuser Pete Townsend's latest not-quite-rock-opera: "Whatever happened to all that lovely hippie shit?" And I recalled the line MacGuru used on me in 1984 after he had lashed out obscene sums of money for his 128K Mac and was trying to persuade me to do likewise: "Hey, man, computers are the new rock and roll."


The original personal computing gurus – including others less famous and considerably less rich than Gates, Jobs and Wozniak – were pursuers of a radical agenda to empower the individual. The home computer would – theoretically, at least – redress the technological balance of power by giving the punter access to some of the resources traditionally reserved for the governments, the military and the corporations.

Those drug-addled dweebs in garages were to infotech what hippies, punks, rappers and grungers were to the mega-dull corporate rock to which pop defaults whenever potential troublemakers get lazy. Jobs and Gates were the kind of

megalomaniac *wunderkinder* on which rock has traditionally thrived and between them they created an industry. Gates is still in the driving seat because he could code, while Jobs just knew how to yell at people who could code.

So what happens? Successful hippies end up having to get corporate or get out of the business, and they end up directing their fab products at corporate users because they're the ones with the money. The end result is that the business is now locked down tight – today's spotty, socially maladroit technodweeb doesn't have a hope of cooking up something in the garage which could upset the AppleCart of any one of software's Big Six. Instead, they either write games (about as rock-and-roll as computing gets these days) or go to Microsoft – or Apple, or Aldus, or Adobe – and work anonymously in the code mines, writing the stuff that the suits strut and plug at trade shows. On the other hand, today's spotty, socially-maladroit rock dweeb can still make the top 10 and get their neon zits and pierced nipples immortalised by *NME* and MTV. Guess who gets more ego gratification? Now guess who gets the stock options?

MacGuru suggests this illuminating example: imagine a Cupertino pizza parlour halfway between Apple headquarters and a local recording studio. At lunchtime, there are two indistinguishable gangs of long-haired, baseball-capped youths noisily talking shop. One gang is a band who may be vaguely famous in an indie sort of way, but unless they've already had a hit or three, they may only just be able to buy their pizza. The other gang are Apple programmers, and they could probably buy the pizza parlour.

So what *did* happen to that lovely hippie shit? Answer: it often takes a certain idealism to get a potential achievement off the ground. But the true high-flyer knows that when the booster rocket's run out of juice, it should be dumped. 'Em-powerment of the individual' was a powerful booster rocket for the personal-computer business in general, and Apple in particular, and Macs and other boxes are still enabling individuals to compete head on with corporations, as numerous hit techno singles and DTP grand slams have shown. But it's not where the big money is – and the first priority after getting out of the garage is making sure you need never go back there. 

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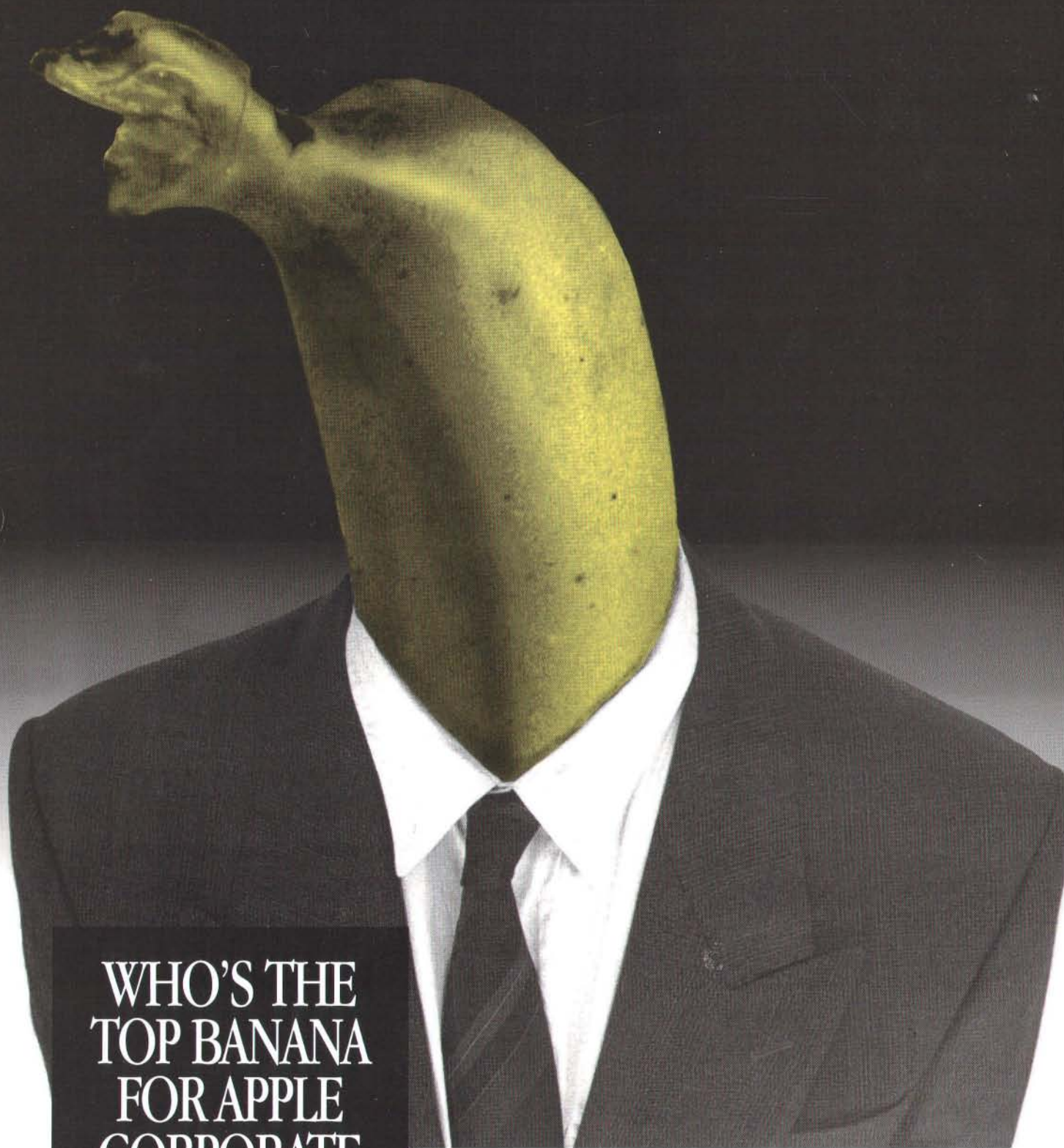
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